

THE PERCEIVED IMPACTS OF ACCESS TO THE LEAST RESTRICTIVE
ACADEMIC ENVIRONMENT FOR ACADEMIC AND CAREER GOAL
ATTAINMENT FOR STUDENTS WITH HIGH-FUNCTIONING AUTISM IN THE
COMMONWEALTH OF VIRGINIA

by

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DEDICATION

This dissertation is dedicated to my children. To Ben whose love, wisdom, support, and humor during this process has provided me with unending encouragement and a belief that I am as capable as he thinks I am. To Matt, without whom this dissertation would not have been written, your journey has taught me to be out of the box, be brave, and dare to do what I love most. You inspire me to live my best life. My enduring love to you both.

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ABSTRACT

THE IMPACTS OF ACCESS TO THE LEAST RESTRICTIVE ACADEMIC ENVIRONMENT FOR ACADEMIC AND CAREER GOAL ATTAINMENT FOR STUDENTS WITH HIGH-FUNCTIONING AUTISM IN THE COMMONWEALTH OF VIRGINIA

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This study uses an explanatory sequential mixed-methods design to explore, through parental report, access to the least restrictive environment (LRE) for high school students with high-functioning autism (HFA), how LRE affects academic and career goal attainment, and how students with HFA are experiencing the LRE provision of the Individuals with Disabilities Education Improvement Act (IDEA) in the Commonwealth of Virginia. Data were collected via an online questionnaire completed by 31 parents and follow-up interviews conducted with 11 parents. Descriptive statistics and nonparametric correlational statistical analysis of the responses on the questionnaire, thematic analysis of qualitative data from open-ended questions on the questionnaire and interviews, as well as document analysis were conducted.

Major findings include a perception by parents that their children had less inclusion than was appropriate when compared to the inclusion of nondisabled peers.

Parents also felt a lack of knowledge of HFA by school staff may drive a lack of academic support and accommodation in educational settings, limiting LRE. However, there were statistically significant positive correlations found between some academic skills and some parents' perception that their children experienced appropriate inclusion with nondisabled peers. As well, parent-perceived access to LRE was positively correlated with parent perception of academic and career goal attainment for some parents.

Additional findings show an appropriate academic environment to facilitate the attainment of academic and career goals includes not only academic supports but also social skills supports. There may be significant differences between what the Commonwealth of Virginia outlines in their best practices for inclusion of students with autism and what students with HFA experience in the classroom. Findings are discussed and implications for policy and future research are outlined.

CHAPTER ONE

This chapter establishes the context for this study. This chapter outlines (a) the statement of the problem, (b) federal legislation and academic access for students with disabilities, (c) Virginia guidelines and academic access for students with autism spectrum disorder (ASD), (d) study rationale, (e) purpose of the study and research questions, and (f) definition of key terms.

Students with autism spectrum disorder (ASD) have unique challenges in accessing the appropriate educational environment equal to their cognitive abilities. Accessing the least restrictive academic environment is critical to the intellectual and social development of students on the autism spectrum (Assouline, Foley Nicpon, & Dockery, 2012; Bianco, Carothers, & Smiley, 2009) and also greatly impacts their future ability to access higher education and training, participate in a work environment, and live independently (Cedurland, Hagberg, Billstedt, Gillberg, & Gillberg, 2008; Howlin & Moss, 2012).

Autism is identified as a pervasive developmental disorder by the *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition [DSM-IV]* (American Psychiatric Association [APA], 2000). There are three general criteria for an autism diagnosis: qualitative impairments in social interaction; communication; and stereotyped patterns of behavior, interests, and activities (APA, 2000). Within this classification system there

were five diagnostic criteria: autistic disorder, Rett's disorder, childhood disintegrative disorder, Asperger disorder, and pervasive developmental disorder not otherwise specified (PDD-NOS). The updated *Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition [DSM-5]* (APA, 2013b) eliminated the taxonomy of the DSM-IV and used the term ASD to describe all individuals with an autism diagnosis. However, autism is a spectrum disorder and using the term *ASD* without referencing the levels of functioning does not differentiate where an individual may fall on the spectrum. The term high-functioning autism (HFA) is used in this study to distinguish individuals who are on the higher functioning end of the autism spectrum and exhibit intellectual abilities, expressed as intelligence quotients (IQ), in the borderline range (IQ 70-84) to normal range (IQ > 85) of IQ (Centers for Disease Control [CDC], 2014). A more thorough discussion of the taxonomy of ASD and its usage in this study is included in Chapter 2. However, it is useful to note here that the terms ASD, autism, Asperger syndrome, and HFA are all used in various sections of the narrative in this study. ASD may be used as an inclusive term when referring to all individuals within the spectrum of autism. As well, an effort has been made to reflect the terminology used by the researchers; in the literature as it is being discussed in Chapter 2. This means that ASD, HFA, autism, or Asperger syndrome may be used in discussing the existing research articles. Also, the term ASD may be used in later chapters if the source documents referenced in this study do so. The term HFA is used to refer to the participants in this study.

The Centers for Disease Control (CDC) (2014) recently released the updated prevalence data for children with ASD and found that 1 in 68 children have been

diagnosed with autism. This represents a 123% increase from the years 2002 to 2010. As well, for individuals classified as having a developmental disability, autism has increased fourfold from 1997-1999 to 2007-2008 (Boyle et al., 2011). According to parental and teacher reports of adolescents' degrees of functioning within the ASD population, 44% ($SD = 2.6$) of students with autism have either no, or minor, communication deficits (Wagner et al., 2003) and current prevalence data show 69% do not have an intellectual disability (CDC, 2014). The term *high-functioning autism* (HFA) describes individuals who have intellectual abilities with IQs above 70; within this group, individuals with IQs between 71 and 85 increased to 23% of the total population with autism, and individuals with IQs of 86 and above increased to 46% of the total population with autism (CDC, 2014). This represents a significant shift in individuals with autism possessing IQs above the range of intellectual disability over the last 10 years (CDC, 2014). As the rate of children diagnosed with HFA continues to rise, so must the secondary school-level response to educate these individuals so that they will be prepared to advance to postsecondary education and training or be career ready after high school.

Statement of the Problem

As the number of students with HFA increases, schools will find that these students will require access to general education settings in greater numbers. However, the data show this is not happening to the extent that the intellectual abilities of students with autism would seem to indicate. Secondary students with ASD take only one third of their coursework in general education classes, whereas 62% of the courses they take are in special education settings. Only 36% of the students who take classes in general

education settings are in academic classes; the remaining students access general education settings through nonacademic classes such as music or physical education (Newman, 2007). As well, only 33% of secondary students with ASD are taking the same standard, grade-level curriculum as their typical peers (Newman, 2007). Although including students on the autism spectrum in general education classrooms may necessitate access to accommodations to succeed, studies do support their inclusion as a means to higher academic achievement (Assouline et al., 2012; Kurth & Mastergeorge, 2010) and to ensure access to the general education curriculum (Kurth & Mastergeorge, 2012). Kurth and Mastergeorge (2012), in a study examining general education settings for students with autism, found that students with ASD were engaged in class work to the same degree as their typical peers, that students with ASD participated at the same level as their typical peers, and that access to the core curriculum was considerably higher in general education classes than in self-contained classes.

Background of the Problem

The next sections will discuss the background of the problem. The Individuals with Disabilities Education Improvement Act (IDEA) (2004) will be introduced. There will be a brief discussion of court cases pertaining to access to education for persons with disabilities. As well, the least restrictive environment (LRE) provision of the IDEA (2004) will be introduced.

Federal Legislation and Academic Access for Students with Disabilities

There is recognition, codified by the Individuals with Disabilities Education Improvement Act (IDEA) (2004), that in order to develop the necessary cognitive and

social benefits of an academic placement, students with disabilities must have the opportunity to benefit from the least restrictive educational environment with their typical peers. The IDEA establishes that children with disabilities are entitled to a “free appropriate public education” (FAPE) (IDEA, 2004). The legislation includes a preamble that specifies the legislation’s FAPE intent and states that, “improving educational results for children with disabilities is an essential element of our national policy of ensuring equality of opportunity, full participation, independent living, and economic self-sufficiency for individuals with disabilities” (IDEA, 2004, Sec. 682, (c)(1)).

In 1982 the U.S. Supreme Court affirmed the concept of equality of opportunity in *Board of Education of Hendrick Hudson Central School District v. Rowley* (1982) by finding that students with disabilities must be afforded the same level of education to achieve their full potential commensurate with their nondisabled peers and that the unique needs of the child must be considered in an educational plan (*Board of Education of Hendrick Hudson Central School District v. Rowley*, 1982; Hersh & Johansen, 2007; Osborne, 1992). As well, the Fourth Circuit court of appeals found in 1985, in *Hall v. Vance County Board of Education*, that a student’s intellectual potential is a valid gauge in measuring whether academic progress is meaningful for a student with disabilities (Osborne, 1992). The courts began to view the benefits of socialization as well as academics in their decisions concerning academic placement (Osborne & Dimattia, 1994). In two cases, *Roncker v. Walter* (1983) and *Bonadonna v. Cooperman* (1985), the courts held that socialization was as important a consideration in the placement of

students with disabilities in a general education setting as academic progress (Osborne, 1992; Osborne & Dimattia, 1994).

The least restrictive environment (LRE) provision of the IDEA (2004) is one aspect of the statute that establishes educational access for students with disabilities and was created to break down the historical and structural barriers for students with disabilities to access the same educational opportunities as their typical peers. The statute requires that each student's "unique needs" be addressed and if necessary "the use of supplementary aids and services" be provided to ensure access to appropriate educational environments (IDEA, 2004). The need to access these educational opportunities becomes even more critical as the skills, abilities, and knowledge to access specialized training or other educational opportunities at the postsecondary level increases. In addition, many of the enriched environments of special school programs, advanced, gifted and talented (GT), or advanced placement (AP) classes give students opportunities for personal and intellectual growth and for enriched academic experiences not available in other educational settings.

Virginia Guidelines and Academic Access for Students with High-Functioning Autism

The Commonwealth of Virginia reiterates the requirement of IDEA to provide LRE to all students with disabilities who attend school in the Commonwealth in the *Regulations Governing Special Education Programs for Children with Disabilities in Virginia* (Virginia Department of Education [VDOE] Office of Special Education and Student Services, 2010a). The Commonwealth of Virginia also elaborates on its

understanding of what the LRE mandate should mean to students with ASD. It acknowledges in the *Models of Best Practice in the Education of Students with Autism Spectrum Disorders* that “what is required” for students with ASD “is individualized consideration of all settings in terms of what will best meet the learning needs and develop the strengths of the student” (VDOE, Office of Special Education and Student Services, 2011, p. 28), and that “failing to provide students with ASD with social and learning opportunities is likely to substantially impede development” (p. 28).

However, over the last five years, the Commonwealth’s progress in implementing the LRE requirement of IDEA (2004) has been lacking. According to the *Commonwealth of Virginia, Part B Annual Performance Report for 2010-2011* (2012a), the Commonwealth of Virginia is out of compliance with the federal requirements of the LRE mandate in IDEA (2004) and has not met its LRE goals for the last five years (this will be discussed further in Chapter 2). There are no data that establish which students with disabilities are able to access LRE in the Commonwealth, nor is there information that describes whether the current educational placements of students with ASD are enabling these students to develop their strengths or best meet their learning needs.

Study Rationale

A failure to address the unique needs of students who have disabilities but are also intellectually capable is likely to result in them having a lack of motivation, depression, academic failure (Baum, 1994; Bianco et al., 2009), low self-esteem (Graetz & Spampinato, 2008), and stress (Baum, 1994). If students with HFA do not receive the appropriate academic instruction that remediates their weaknesses but develops their

gifts, they will not be appropriately prepared to utilize their abilities to maximize their potential (Assouline et al., 2012; Baum, 1994; Bianco et al., 2009; Howlin & Moss, 2012). Addressing the academic needs of students with HFA has implications for future access to training and advanced education, economic development, and functional outcomes (Assouline et al., 2012; Cedurland et al., 2008; Howlin & Moss, 2012).

In short, if students with HFA in the Commonwealth of Virginia are not able to access the educational settings that enable them to develop their academic strengths, realizing their academic and career goals may not be possible. The facts about the access that students with HFA have to LRE in the Commonwealth of Virginia have not been determined. As well, the effect of this access has not been explored in relation to academic and career goal attainment for this population of students. Additionally, there is no research exploring whether a student's academic profile impacts his or her access to LRE. This study seeks to add to the knowledge of educational access and attainment of LRE for students with HFA, how this access may affect academic and career goal attainment, and how the LRE statute is being applied for these students in the Commonwealth of Virginia.

Purpose of the Study and Research Questions

The purpose of this study was to explore, through parental report, access to the least restrictive environment (LRE) for high school students with high-functioning autism (HFA), how access to LRE impacts academic and career goal attainment, and how students with HFA are experiencing the LRE provision of the IDEA across the Commonwealth of Virginia. There are four research questions addressed in this study.

1. What are the relationships between the academic profile of students with HFA and their parent-perceived LRE?
2. Does parental perception of access to LRE relate to students' academic and career goal attainment?
3. What are the factors that encourage access to LRE, or create barriers to LRE, for students with HFA, as reported by their parents?
4. How has the students' academic placement affected their academic and career goal attainment, as reported by their parents?

The first and second questions seek to determine the relationship between a student's academic profile and his or her access to LRE, and the relationship between the student's access to LRE and his or her academic and career goal attainment. The third and fourth questions are process oriented and explore parental perceptions of access to LRE by their children with HFA, how these educational placements have affected their children's academic and career goal attainment, and how the LRE mandate is being applied to students with HFA in the Commonwealth of Virginia as reported by their parents.

Definition of Key Terms

Several terms are used with specific meanings in this research. These terms are defined as follows.

Academic Goals – The goals that students set for themselves in order to achieve future academic progress. This may include entry into special programs or advanced classes, or the type of college or trade school they would like to attend.

Academic Profile – For the purposes of this study an academic profile is a profile of abilities and challenges specific to performance in school: verbal; reading/decoding – sounding out words; reading comprehension – understanding what he/she reads; writing/composition skills; math skills; social skills; executive functioning – ability to organize, judge time, plan; working memory – problem solving while remembering; processing speed – process information automatically and quickly; functional skills – take care of personal needs, manage household chores, anticipate required needs; emotional maturity – ability to control emotions under stress; eye/hand coordination – ability to guide hand movement guided by vision (e.g. handwriting).

Asperger Syndrome (AS) – A diagnostic criteria of autism spectrum disorder in the *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV)* that requires no language development deficits for diagnosis.

Autism Spectrum Disorder (ASD) – A criteria that encompasses all individuals within the autism spectrum.

Career Goals – The goals that students set for themselves for participation in the workforce after high school or after advanced study in college or trade school.

Cognitive Profile – For the purposes of this study a cognitive profile is defined as a description of intellectual strengths and weaknesses constructed by the results of IQ subtests.

General Education Setting – A classroom setting where the student spends at least 80% or more of the day in collaborative general education classes with typical, nondisabled peers.

High-Functioning Autism (HFA) – For the purposes of this study an individual is considered to have “high functioning” autism if he or she has a verbal or full-scale IQ of 70 or above on an intellectual assessment. This measure of high functioning is commonly used throughout the literature on individuals with HFA.

Inclusion – The practice of including students with disabilities in educational environments with typical, nondisabled students.

Local Education Authority (LEA) – The local education authority is typically at the district level.

Self-Contained Setting – A classroom setting where the students spends more than 60% of the day in special education classes with no typical, nondisabled peers.

Student Profile – The combined academic and cognitive strengths and weaknesses that describe a student’s ability and performance levels.

The goal of this study is to explore, through parental report, access to LRE for high school students with HFA, how students’ academic and intellectual profiles affect LRE, how LRE affects academic and career goal attainment, and how students with HFA are experiencing the LRE provision of IDEA in the Commonwealth of Virginia. An in-depth exploration of the background research literature for this study is provided in Chapter 2.

CHAPTER TWO

This literature review begins with an exploration of the extant literature on the cognitive and behavioral characteristics of individuals with ASD and HFA. The research base specific to individuals with HFA is still developing, which necessitates that research including individuals with ASD also be integrated into this literature review. As well, the differentiation between HFA and ASD is explored and highlights the debate within the research and clinical communities regarding the differentiation between the two diagnoses. Following this is a discussion of the historical context of the Individuals with Disabilities Education Improvement Act (2004), the least restrictive environment provision of the IDEA (2004), and the implementation of the least restrictive environment provision in the Commonwealth of Virginia. Next is a review of the literature on the impacts of beliefs, attitudes, education, and experiences of teachers and administrators, and institutional structures and policies, on LRE for students with ASD. As well, the views of parents who have children with ASD and the views and experiences of individuals with ASD and HFA about inclusion are explored through relevant research. A summary of the literature on the benefits of inclusive environments for students with ASD is also included. The literature review concludes with an examination of the policy frameworks used to explore and explain the implementation of the LRE

policy in Virginia for individuals with ASD and HFA. A review of key findings and an outline of the study complete the chapter.

Postsecondary outcomes for individuals with HFA are surprisingly poor when considering their high ability (Cedurland et al., 2008; Howlin, Goode, Hutton, & Rutter, 2004; Howlin & Moss, 2012). In order to address these poor outcomes, it is necessary to know more about accessing the least restrictive academic environment (LRE) for these students. LRE is not only critical in providing educational opportunity and advancement for students with HFA (Assouline et al., 2012; Bianco et al., 2009; IDEA, 2004), but can also increase their career opportunities and lead to economic self-sufficiency. The purpose of this study is to explore, through parental report and an examination of confirmatory evidence, access to the least restrictive environment for high school students with high-functioning autism, how access to LRE impacts academic and career goal attainment, and how students with HFA are experiencing the LRE provision of the IDEA (2004) in the Commonwealth of Virginia.

Literature Search Procedures

The literature search procedures included a search of relevant peer-reviewed studies through ERIC, H. W. Wilson (education and social science collections), Education Research Complete, Public Administration Abstracts, Lexus-Nexus, Dissertation Abstracts, and other psychology and behavioral sciences collections available through university databases. The descriptors were: high-functioning autism, Asperger syndrome, least restrictive environment, inclusion, autism, and educational placement. State and federal policies and statutes were accessed through a variety of

websites such as the United States Department of Health and Human Services (<http://www.hhs.gov>), the United States Department of Education (<http://www.ed.gov>), and the Department of Education for the Commonwealth of Virginia (<http://www.doe.virginia.gov>).

Characteristics and Academic Profiles of Individuals with Autism Spectrum Disorder

The *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition [DSM-IV]* (APA, 2000) identifies autism as a pervasive developmental disorder and establishes the three general criteria for an autism diagnosis: qualitative impairments in social interaction; communication; and stereotyped patterns of behavior, interests, and activities. Within the pervasive developmental disorder classification system there are multiple diagnostic criteria, or subgroups, including autistic disorder, Rett's disorder, childhood disintegrative disorder, Asperger disorder, and pervasive developmental disorder not otherwise specified (PDD-NOS). Prior studies have shown that regional differences may play a part in which diagnosis an individual may attain (Wing, Gould, & Gillberg, 2011). It is this variability in diagnostic criteria and diagnosis that was the impetus for a revision of the diagnostic criteria for autism (APA, 2013a). The new fifth edition of the *Diagnostic and Statistical Manual of Mental Disorders* was published in May of 2013 (APA, 2013b), and the diagnostic criteria for autism were changed to the single diagnostic criteria of Autism Spectrum Disorder (ASD). However, the participants for this current study were diagnosed under the DSM-IV (APA, 2000), thus the diagnostic criteria discussed in this study will reflect the DSM-IV (2000).

The term *autism spectrum disorder*, or ASD, has been used in recognition that ASD is a spectrum disorder and that there is a great deal of heterogeneity in the presentation of autism symptomology (Wing et al., 2011), which introduces a good deal of complexity in establishing approaches to address individual student needs in the classroom as the range and severity of autistic symptoms is highly individual. The DSM-IV (APA, 2000) specifically directs clinicians to use the diagnostic criteria as a guideline and to use their clinical experience and judgment to guide the diagnostic process. It is a caution that might also be applied by educators in their approach to addressing the academic needs of students with ASD.

Latest Prevalence Data

The United States Centers for Disease Control (CDC) periodically publish surveillance summaries in various sites throughout the United States, on the prevalence and characteristics of individuals with autism who are eight years of age (CDC, 2014). The prevalence data for 2010 (CDC, 2012) showed that 1 in 88 children, in 13 sites throughout the United States, had been identified with autism, which represented an increase of 78% from 2002 to 2008. The most recent prevalence data from 2012 (CDC, 2014) shows another increase to 1 in 68 children with a diagnosis of autism, an additional increase of 30% from 2008 to 2010. The 2014 prevalence data represents 1 in 42 males and 1 in 189 females, which indicates a 4:1 ratio of males to females who have been identified with autism. Hispanic children and non-Hispanic Black children represented the largest increase in prevalence for ethnicity. Although the increase in prevalence is of concern, another shift is taking place in these data.

Data for intellectual ability were available for 70% of the population sampled in 2012. Of that population, 31% had an intellectual disability (i.e., IQ < 70), 23% had IQs in the range of 71-85, and 46% had IQ scores above 85. Children who were identified in the normal range for intellectual ability (above 85) had the largest increase under this category, which represents a decades-long shift from the majority of individuals diagnosed with autism possessing IQs in the intellectually disabled range to a current 69% individuals with autism possessing IQs in the borderline to above-average range.

Cognitive Profiles of Individuals with Autism

Defining the differences in cognitive and behavior profiles of individuals diagnosed with an autism spectrum disorder is problematic due to the heterogeneity of the population, and the differences in diagnostic practice across regions and within the practice of psychology. Additionally, there is no inclusion of intellectual functioning within the DSM-IV diagnostic criteria and there is no formal definition of high-functioning autism (HFA). For the purposes of this study, a definition of HFA is constructed by reviewing and synthesizing existing research.

Often there are differences in the results of studies to establish cognitive profiles of individuals with ASD. Some research indicates different tests should be used to assess the cognitive abilities of individuals with autism based on whether the individuals are high functioning (IQ > 70) or have an intellectual disability. Dawson, Soulières, Gernsbacher, and Mottron (2007) compared a group of 38 children with ASD, mean age 10.39, with a group of 24 typically developing children on their performance on two measures of intelligence, the Wechsler Intelligence Scale for Children – Third Edition

[WISC-III] (Wechsler, 1991) and the Raven's Progressive Matrices (Raven, Raven, & Court, 1998). Their goal was to determine if there would be differences in resulting intelligence scores due to the format of the tests: The WISC-III (Wechsler, 1991) is a language-based test and the Raven's Progressive Matrices (Raven et al., 1998) does not use language in determining fluid intelligence but instead asks the test taker to complete, or predict, a pattern. Dawson et al. (2007) contend that many hypotheses of intelligence for individuals with ASD postulate that there is a deficit in higher order thinking due to lower scores on some cognitive tests, such as the WISC-III (Wechsler, 1991b), that require language and social skills, which are weaknesses for individuals with ASD. As a result there has been an unfair underestimation of intelligence for individuals with ASD. Furthermore, the researchers found that the individuals with autism scored statistically significantly higher on the Raven's Progressive Matrices (Raven et al., 1998): A third of the participants were found to be in the low-functioning range when tested with the WISC-III (Wechsler, 1991), whereas when tested with the Raven's Progressive Matrices (Raven et al., 1998) only 5% were found to be in the low-functioning range. This difference was not found with the control group of typical peers. The study was replicated with two adult groups, resulting in the same findings. The researchers conclude that many individuals with autism have been inappropriately assessed, which may have impacts on educational programming.

In response to Dawson et al. (2007), Bölte, Dziobek, and Poustka (2009) replicated the study with a group of 48 individuals with ASD. They found that there were no statistically significant differences in the results of the two measures of intelligence

with the exception of one group. Individuals with ASD who were in the range of cognitive functioning below 85 scored higher on the Raven's Progressive Matrices (Raven et al., 1998). The researchers propose that for individuals with ASD, in the average to high range of intelligence, language-based IQ assessments are appropriate and may measure intelligence more accurately due to the higher verbal skills of these individuals. However, individuals with ASD who are lower functioning may be better assessed with nonverbal IQ measures. The examination of these two studies illustrates the difficulty in constructing cognitive profiles of individuals on the autism spectrum, but it also demonstrates significant differences between higher functioning and lower functioning individuals with autism.

Some archival research indicates that the intellectual and ability profiles of individuals with low-functioning autism and individuals with high-functioning autism show different cognitive patterns reflected by IQ test results (Rumsey, 1992; Siegel, Minshew & Goldstein, 1996; Yirmiya & Sigman, 1991). Siegel et al. (1996) explored early research that cited a profile that became prevalent in the differential diagnosis of individuals on the autism spectrum (see Rumsey, 1992; Yirmiya & Sigman, 1991), done with lower functioning individuals (IQ < 70), that identified a lower Verbal IQ (VIQ) than Performance IQ (PIQ) on the Wechsler Intelligence Scale for Children – Revised (WISC-R) (Wechsler, 1974) and the Wechsler Adult Intelligence Scale-Revised (WAIS-R) (Wechsler, 1981). Additionally, this profile shows the highest subtest scores in Block Design, which measures the ability to “analyze and synthesize abstract visual stimuli” (Wechsler et al., 2004, p. 15), and lowest subtest scores in Comprehension, which

measures “verbal reasoning and conceptualization, verbal comprehension and verbal expression, the ability to evaluate and use past experience, and the ability to demonstrate practical information” (Wechsler et al., 2004, p. 14). The Comprehension subtest requires test takers to answer questions based on social situations, a deficit in individuals with ASD. In an effort to further develop this idea of a unique cognitive profile for individuals with HFA, Siegel et al. (1996) reviewed 16 studies, conducted from 1965 to 1992, that analyzed the IQ scores of children and adults ($n = 4$ to 52) with HFA. In these 16 studies a mean Performance IQ or Full Scale IQ above 70 defined high-functioning autism.

The results of Siegel et al.’s (1996) research review found that 10 studies (Allen, Lincoln, & Kaufman, 1991; Asarnow, Tanguay, Bott, & Freeman, 1987; Freeman, Lucas, Forness, & Ritvo, 1985; Lincoln, Courchesne, Kilman, Elmasian, & Allen, 1988; Narita & Koga, 1987; Ohta, 1987; Rumsey & Hamburger, 1988; Schneider & Asarnow, 1987; Venter, Lord, & Schopler, 1992; Wassing, 1965) reported a higher PIQ than VIQ profile, although of these, two (Rumsey & Hamburger, 1988; Venter et al., 1992) did not show a 12-point difference at the 5% confidence level, which would indicate a significant difference between the two tests as per the WISC-R (Wechsler, 1981) test manual (Siegel et al., 1996). Five other studies (Lockyer & Rutter, 1970; Minshew, Goldstein, Muenz, & Payton, 1992; Rumsey & Hamburger, 1990; Szatmari, Tuff, Finlayson, & Bartolucci, 1990; Tymchuk, Simmons, & Neafsey, 1977) showed either no difference in PIQ and VIQ, or a slightly higher (range 4 to 9 points) VIQ. The researchers concluded that, with respect to PIQ and VIQ on the WISC-R (Wechsler, 1974) and the WAIS-R (Wechsler,

1981), prior research results did not establish a discernibly consistent pattern of performance and verbal ability scores for individuals with high-functioning autism.

However, Siegel et al. (1996) did find a consistent pattern on subtest scores. In general, on the test of Verbal IQ, the Digit Span subtest, which measures “rote learning and memory, attention, encoding, and auditory processing” (Wechsler et al., 2004, p. 16), was the highest score, whereas the lowest score was on the Comprehension subtest. On the test of Performance IQ, the highest subtest was Block Design and the lowest subtests were on the Picture Arrangement, which measures visual perception, organization, and recognition of detail (Wechsler et al., 2004) or Coding/Digit Symbol, which measures processing speed through skills such as “short-term memory, learning ability, visual perception, visual-motor coordination, visual scanning ability, cognitive flexibility, attention, and motivation” (Wechsler et al., 2004, p. 17). Although these differences showed a consistent pattern, the point differences varied. When considering the results of these studies the variability of the diagnostic criteria should be considered and the results should be viewed with caution. The earlier studies (Lockyer & Rutter, 1970; Tymchuk et al., 1977; Wassing, 1965) were conducted prior to the publication of DSM-III, in 1980, and before autism existed as a diagnosis.

Siegel et al. (1996) also conducted two of their own studies that analyzed the IQ profiles of 81 high-functioning individuals with autism. In study one, the scores of the WISC-R (Wechsler, 1974) for 45 children, aged 6 years to 16 years, 6 months, were analyzed. In study two, the scores on the WAIS-R (Wechsler, 1981) for 36 adults, aged 16 years, 11 months to 51 years, 11 months, were analyzed. The individuals in these two

studies were considered to be high functioning if they had Full Scale and Verbal IQ scores of at least 70 on the WISC-R (Wechsler, 1974) or the WAIS-R (Wechsler, 1981).

The range of IQ scores for the participants in study one represented a wide range of intellectual ability: Verbal IQ results ranged from 72 to 136, Performance IQ results ranged from 74 to 126, and Full-Scale IQ results ranged from 72 to 131. As well, there was a wide range of IQ scores for the adult participants in group two: Verbal IQ results ranged from 70 to 148, Performance IQ results ranged from 70 to 122, and Full-Scale IQ ranged from 70 to 136. The researchers compared the group means of the Performance, Verbal, and Full-Scale IQ scores, and rank ordered the subtest scores. Results of study one showed that there were no statistically significant patterns detected in the Full-Scale IQ (FSIQ), VIQ, and PIQ scores on the WISC-R. However, the researchers found that the subtest scores did show statistically significant variability that exceeded what would be found by chance. The researchers found similar results in study two: There were no statistically significant patterns of abilities related to Verbal IQ, Performance IQ, and Full-Scale IQ; however, there was statistically significant variability that exceeded what would be found by chance for the subtest scores. While there was no statistically significant difference between VIQ and PIQ, it is worth noting that in the adult group, 68% of participants showed a higher VIQ than PIQ and in the child group, 58% of the participants had a higher VIQ than PIQ.

For both groups, the results of the subtest scores on the WISC-R (Wechsler, 1974) and the WAIS-R (Wechsler, 1981) were consistent with prior research: The lowest subtest scores were on the Comprehension subtest in the Verbal IQ test, and the highest

subtest score was on the Block Design subtest of the Performance IQ test. The researchers note, however, that individual results varied on the VIQ, PIQ, FSIQ, and the subtests, so much so that no assumptions should be made regarding the intellectual abilities of a specific individual with high-functioning autism. Siegel et al. (1996) acknowledge the heterogeneity of this population and assert that the mean similarities found within the subtest scores do not necessarily reflect the IQ profiles at the individual, or case level, with high-functioning autism. Their literature review and their two studies in this research illustrate the variability of intellectual functioning for individuals with high-functioning autism; however, a tentative conclusion from this research may be that high-functioning individuals with autism may have deficits in tasks that require reasoning within social contexts and strengths in tasks that require the ability to analyze abstract visual stimuli. Additionally, all of the research reviewed in this study used an IQ score of 70 on the WISC-R (Wechsler, 1974) or the WAIS-R (Wechsler, 1981) to define high-functioning autism.

More recently a group of researchers from Japan attempted to determine if diagnostic criteria of individuals with HFA were correlated with intelligence quotients on the Wechsler Adult Intelligence Scale-III (WAIS-III) (Wechsler, 1997). Kanai et al. (2012) assessed 122 individuals, with a mean age of 29, whose cognitive scores placed them in the category of high-functioning autism, to determine if there were differences in the cognitive profiles of individuals with PDD-NOS, Asperger disorder, or high-functioning autism. Participants were assessed with the WAIS-III (Wechsler, 1997). Results showed that approximately 80% of the participants, irrespective of diagnosis, had

higher verbal IQ scores than performance IQ scores. Consistent with prior research (Spek, Scholte, & van Berckelaer-Onnes, 2008), the individuals who had been diagnosed with Asperger disorder had higher verbal IQ scores than the participants with HFA and PDD-NOS. All participants showed lower cognitive scores in the working memory index; however, those with Asperger disorder scored the highest of the three groups. This study showed similar intelligence patterns reported in other research: AS > PDD-NOS > HFA (de Bruin, Verheij, & Ferdinand, 2006) and led Kanai et al. to conclude that individuals with AS had higher cognitive profiles than individuals with PDD-NOS, who in turn had higher cognitive profiles than individuals with HFA. However, this pattern of higher cognition dependent on diagnostic criteria might be expected considering the language component of the diagnostic criteria for autism and AS includes a stipulation for normal language development in AS and, conversely, a stipulation for a language delay in autism. This study shows that although there may be some differences in cognitive abilities based on autism diagnostic criteria, the general ability profile of individuals with HFA appears to be similar, with higher cognitive ability in verbal IQ than in performance IQ.

Mayes and Calhoun (2008) found that individuals with HFA had strengths in verbal and visual reasoning and weaknesses in attention, grapho-motor abilities, and processing speed. The participants had above-normal scores on the WISC-IV (Wechsler, 2003) Perceptual Reasoning (PRI) and Verbal Comprehension Indexes (VCI) and below-normal scores on the Working Memory (WMI) and Processing Speed (PSI) Indexes (p. 435). In this study Full-Scale IQ was the best predictor of academic achievement.

Additionally, all of the participants in the study showed weaknesses in written expression. The researchers argue that the four indexes within the WISC-IV (Wechsler, 2003) are the most appropriate diagnostic measure of the intellectual abilities of individuals with HFA as the WISC-IV provides subtests that allow the visual reasoning and verbal strengths of individuals with HFA to become evident. Additionally, there are subtests that pinpoint weaknesses in focus, processing speed, grapho-motor abilities, language comprehension, and social reasoning. As well, subtests measuring visual reasoning are untimed and do not require physical manipulation, thus test takers will not be penalized for slow processing and grapho-motor difficulties that may be a typical weakness for individuals with HFA. This study was included in a literature review by Whitby and Mancil (2009), who sought to determine academic achievement profiles of individuals with HFA.

Whitby and Mancil (2009) reviewed studies from 1981 to 2009 that examined the intellectual and academic achievement profiles of students, aged 3 to 17 years old, with HFA. Their literature review resulted in six studies (Dickerson Mayes & Calhoun, 2003a, 2003b; Dickerson Mayes & Calhoun, 2008; Goldstein, Minshew, & Siegal, 1994; Griswold, Barnhill, Smith Myles, Hagiwara, & Simpson, 2002; Minshew, Goldstein, Taylor, & Siegel, 1994) that identified academic achievement profiles of students with HFA, whose IQs ranged from 66 to 144, using norm-referenced IQ and achievement tests. The results of the literature review suggested that there might be an academic achievement profile of individuals with HFA that may include “deficits in the areas of comprehension, written expression, grapho-motor skills, linguistically complex materials,

complex processing across all domains and problem solving” (p. 557). This review included individuals with a wide range of IQs. More recent studies (see Assouline et al., 2012; Assouline, Foley Nicpon, & Doobay, 2009; Foley-Nicpon, Assouline, & Stinson, 2012) have focused on individuals with cognitive abilities in the gifted range (IQ > 120) to determine if there was a common cognitive and academic achievement profile and whether these profiles were based on the individuals’ diagnostic criteria.

In a study comparing the abilities of cognitively and academically gifted students (IQ > 120) with HFA ($n = 18$) and Asperger disorder ($n = 21$), Foley-Nicpon et al. (2012) assessed 52 students using the WISC-IV (Wechsler, 2003) and the Woodcock–Johnson III Tests of Achievement (WJ-III) (Woodcock, McGrew, & Mather, 2001). One of the goals of this study was to determine if there was a cognitive difference between individuals with HFA and AS. The differentiation between participants with AS and HFA reflects the diagnostic criteria of these disorders: Verbal skill development is delayed in individuals with autism, even if high functioning, whereas individuals with AS do not exhibit a delay in verbal skill development (APA, 2000).

The participants ranged in age from approximately 6 years to 16 years. There were significant differences between the groups’ verbal abilities, with the AS participants scoring higher than the HFA participants. Also, the processing scores of participants with HFA were higher than those of the participants with AS. However, the other aspects of the cognitive profiles were similar: Both groups scored significantly lower on math and writing fluency than on reading fluency; both groups shared a common profile of the Verbal Comprehension Index (VCI) and Perceptual Reasoning Index (PRI) being higher

than the Working Memory Index (WMI) and the Processing Speed Index (PSI); and there were no differences between groups on the academic measures. The researchers caution that when there is a great deal of variability between the four factor indexes where lower order thinking (the WMI and PSI) depresses the FSIQ, a measure of higher level thinking skills, or the General Ability Index (the PRI and VCI), should be used to assess the potential of students with HFA and AS. As well, there was a great deal of variability between the subtest scores and the researchers stressed that when considering academic intervention and planning each individual must be viewed independently from group statistics.

In a study by Mayes and Calhoun (2008) the Wechsler Intelligence Scale for Children – Fourth Edition (WISC-IV) (Wechsler, 2003) and the Wechsler Individual Achievement Test – Second Edition (WIAT-II) Written Expression (Wechsler, 1992) were used to assess the cognitive profile of 54 children with a mean age of 8.2 (range 6-14). The participants were defined as high functioning through a full-scale IQ result of 70 on the WISC-IV (Wechsler, 2003). The researchers did not distinguish between Asperger syndrome and high-functioning autism, citing studies that show that individuals who meet the diagnostic criteria of AS also meet the diagnostic criteria of HFA (Eisenmajer et al., 1996; Howlin, 2003; Manjiviona & Prior, 1995; Mayes, Calhoun, & Crites, 2001; Miller & Ozonoff, 1997; Szatmari, Archer, Fisman, Streiner, & Wilson, 1995; Tryon, Mayes, Rhodes, & Waldo, 2006) and asserting that experts in the field of autism consider Asperger syndrome to be synonymous with high-functioning autism (Eisenmajer et al., 1996; Frith, 2004; Macintosh & Dissanayake, 2004; Manjiviona & Prior, 1995; Mayes &

Calhoun, 2003; Miller & Ozonoff, 2000; Myhr, 1998; Ozonoff, South, & Miller, 2000; Prior et al., 1998; Schopler, 1996, 1998; Wing, 1998). This reflects a view in the research and clinical community that there is no evidence to support the differentiation of AS and HFA (Kaufman, 2012). This view has been reflected in the latest version of the DSM-5 (APA, 2013) with the collapsing of the taxonomy of ASD.

In similar research there are studies that attempt to establish behavioral profiles for students with autism based on the autism diagnostic criteria of the individual. Smith Myles and Simpson (2002) reviewed the literature and created a behavioral profile of students with Asperger syndrome based on descriptive studies. Findings describe individuals who are eager to connect with peers but struggle with the complexities these social interactions require, and have difficulty taking the perspectives of others, understanding the intentions of others, having reciprocity, and understanding how their behavior may affect other people. Attempts at socialization may be clumsy and stiff and may result in rejection by their peers; this may cause confusion, stress, depression, and anxiety.

Smith Myles and Simpson (2002) assert that students with Asperger syndrome, by definition, have normal speech development and have IQs that range from average to gifted. Academic achievement varies but generally students with Asperger syndrome have academic strengths in reading/decoding and oral expression whereas their abilities in comprehending what is said may be comparatively lower. As well, written expression is often a comparative weakness as is mathematical problem solving. Also, due to their higher level of intellectual functioning, students with AS are often in general education

classrooms with teachers who are not trained in academic and behavioral strategies that may assist students with AS in the classroom. Finally, due to the heterogeneity of presenting autism traits, not all interventions will work for all students and each student's unique needs must be addressed.

It appears that there are differences in the cognitive profiles of individuals with HFA when compared to individuals with autism and intellectual disabilities. The results of a study by Dawson et al. (2007) seemed to indicate that individuals with autism spectrum disorder should be assessed with measures that do not rely on language, such as the WISC-III (Wechsler, 1991), but on measures such as the Raven's Progressive Matrices (Raven et al., 1998) that eliminate language. However, in a replication of this study, Bölte et al. (2009) found that eliminating language in IQ assessments might only benefit individuals who have IQs less than 85. Current research shows that assumptions based on cognitive profiles created early in the study of autism may have been invalid because they were based on individuals with lower cognitive functioning. Siegel et al. (1996) found in a review of early research that the assumption of a cognitive profile showing $PIQ > VIQ$ does not appear to be valid for individuals with HFA. Additionally, there does not appear to be a VIQ, PIQ, FSIQ, or cognitive profile, determined by scores on the WISC-R (Wechsler, 1974) and the WAIS-R (Wechsler, 1981), which can be attributed to individuals with HFA. However, this research may have been impacted by the lack of diagnostic criteria in autism before 1980, casting doubt on the generalizability of the conclusions.

This early research did indicate that there might be similarities based on some subtests, specifically lower performance in socially contextualized language ability and higher performance in the ability to analyze abstract visual stimuli. Siegel et al. (1996) found in two of their own studies that although it appears that a VIQ > PIQ profile does not exist on a statistically significant level, there was a tendency for a stronger VIQ with a majority of participants in both the child and adult groups. The researchers also found statistically significant strengths in auditory short-term memory, sequencing skills, attention, concentration, and analyzing abstract visual stimuli. In addition the researchers found similar weaknesses in short-term memory, learning ability, visual perception, visual-motor coordination, visual scanning ability, cognitive flexibility, attention, motivation, and socially contextualized language skills. Whitby and Mancil (2009) also found similar weaknesses in academic profiles of individuals with HFA in their literature review, to include comprehension, grapho-motor skills, understanding linguistically complex materials, and problem solving.

Kanai et al. (2012) found 80% of their participants showed a VIQ > PIQ cognitive profile. The researchers attempted to show that the diagnostic criteria of autism found in the DSM-IV was predictive of intelligence profiles of individuals with HFA, AS, and PDD-NOS. They were able to hierarchically order the intelligence quotients by diagnostic criteria, with AS at the higher end and HFA at the lower end, but did not discuss that the verbally based test, the WAIS-III (Wechsler, 1997) would reasonably reflect the language deficits in individuals with HFA and PDD-NOS. Kanai et al.'s study is reflective of the difficulty in attempting to identify discreet cognitive profiles of

individuals with a variety of diagnostic criteria that fall under HFA. However, the cognitive profile was consistent across diagnostic criteria for a deficit in working memory across all diagnostic groups.

Mayes and Calhoun (2008) cite research to support their justification for collapsing all of the diagnostic criteria for high-functioning autism—that is, AS, PDD-NOS, and HFA—into the single criteria of HFA. Their study used WISC-IV (Weschler, 2003) to establish a cognitive profile for individuals with HFA. The researchers found that the participants had strengths in verbal and visual reasoning and weaknesses in attention, grapho-motor abilities, and processing speed, which has been substantiated by other research after the publication of their study (Foley-Nicpon et al., 2012; Kanai et al., 2011; Whitby & Mancil, 2009).

Throughout the review of research on cognitive, academic, and behavioral profiles of individuals with HFA it is consistently stressed that, although there may be commonalities that can be identified in cognitive and academic functioning, the heterogeneity of the population of individuals with HFA dictates that each individual be viewed as a unique case. However, these commonalities appear to show emerging patterns of behavioral and academic functioning, and cognitive profiles, that can be useful in providing guidelines for the educational placements of individuals with HFA. There appears to be a difference between the cognitive profiles of individuals who have IQs below 70 and those who have IQs above 70. A distinctive IQ profile favoring verbal IQ over performance IQ may be emerging for individuals with HFA. This may reflect the deficits manifested in subtests of performance IQ that focus on abilities in working

memory, focus, processing speed, and dexterity. A cognitive profile for individuals with HFA may include these weaknesses as well as strengths in understanding complex visual stimuli and nonverbal concept formation. The strengths and weaknesses described in the literature of HFA may be an indicator that individuals with HFA share a similar cognitive profile that is a feature of autism. As well, an academic profile is emerging of individuals with HFA who may process information more slowly and have difficulty paying attention but who also may have strengths in fluid reasoning.

This complexity provides some difficulty in educational placement as abilities of individuals with HFA may be masked by deficits that are more noticeable. Although low in number, there are some research studies on the impacts of educational placement on the development of the strengths of individuals with HFA. Assouline et al. (2012) looked at the effect of academic placements and participation in enriched academic programs for individuals with HFA who were cognitively gifted with IQs above 120, whereas Kurth and Mastergeorge (2010) looked at the impacts of inclusion for individuals with autism who had IQs under 70. For both groups the educational placements were significant indicators of academic achievement.

Academic Placement and Characteristics of Students with Autism

Assouline et al. (2012) studied 59 cognitively gifted (IQ > 120) students with autism spectrum disorders and an average age of 10.7 years to determine if academic achievement could be predicted based on student ability and what the effect of talented and gifted programs, grade acceleration, or single-subject acceleration was on achievement. Among the findings was that lower order thinking skills, that is, working

memory and processing speed, were depressed, while higher order thinking skills, such as verbal and nonverbal reasoning skills, were advanced. The findings suggest that the deficits in working memory and processing speed negatively impacted academic performance, resulting in difficulty in predicting academic achievement based on ability, and may be a reason why high-ability students with ASD do not achieve academically as might be expected. Depressed scores in fine motor skills predicted a lack of math achievement. The researchers suggest that the combination of reduced processing speed and visual spatial skills contributed to poor math performance.

Assouline et al.'s (2012) findings provide a profile of high ability students with ASD who, although capable of advanced-level work, may not show these abilities due to the effects of the cognitive features of ASD discussed earlier. Additionally, participation in gifted and talented programs had a positive relationship to achievement in math, reading, and oral language, and was a predictor of math achievement. However, this was not true of grade or single-subject acceleration. The ability and academic profile of gifted students with ASD is different than that of other gifted students. Nondisabled, gifted students do not have deficits in working memory and processing speed (Rowe, Kingsley, & Thompson, 2010), so this difference needs to be considered when deciding on entry into programs that require testing and academic performance. Also, the impact of participation in gifted and talented programs is significant for achievement and may ameliorate the lack of classroom achievement, when compared to intellectual ability, often seen in these students.

In similar research conducted with students with ASD who had lower cognitive ability, Kurth and Mastergeorge (2010) compared two groups of students with ASD, between the ages of 12 to 15 years, who had similar IQ scores and functional abilities. The first group of seven students had been primarily educated in inclusive placements; their mean IQ was 64.9, and their mean adaptive behavior score was 44.4. The second group of eight students had been educated in self-contained settings; their mean IQ was 60.0, and their mean adaptive behavior score was 42.3.

For the students who had been included in general education settings the performance on achievement tests was higher than predicted, in some cases scoring in the average range, even though these students had intellectual abilities in the deficient range. The students who received their instruction in general education classrooms scored higher on the Woodcock-Johnson III Tests of Achievement (WJ-III) (Woodcock et al., 2001) on all measures including reading, writing, and math assessments, although there was no statistically significant difference in IQ scores, adaptive behavior scores, or the severity of autistic symptomology between the students who had attended school in self-contained settings and students who had attended school in general education settings. The differences in achievement scores between the students who had attended classes in general education settings were significant: Some measures showed a difference of four standard deviations; the differences in subtests had effect sizes ranging from .58 to .85.

These studies show that the academic placement of students with ASD is critical to their ability to achieve to their highest potential. A focus on remediating weaknesses may result in educational placements that are less challenging and create a lack of

academic growth. The performance of students with ASD is often much better than predicted when they are placed in academic environments that reflect their strengths rather than in academic environments that focus on weaknesses.

Historical Context of the Individuals with Disabilities Education Improvement Act

There is a history of disability rights and civil rights that inform the creation of the IDEA (2008). This section reviews the historical context and significance of education reform, civil rights, and parental activism on behalf of their children with disabilities.

Social Reform and Education

The advent of compulsory education, as part of the Progressive Movement in the late 19th and early 20th centuries, highlighted the issues of educational access for underserved immigrant and poor populations (Crockett & Kauffman, 1999). The acknowledgement of the needs of disabled World War I veterans through the Rehabilitation Act of 1918 formalized the first civil rights law that addressed the issue of discrimination based on disability (Ashbaker, 2011). During this time states, primarily in the urban centers, implemented policies reflecting a desire for universal education that included classes for special populations, which resulted in an increase in educational access for students with special needs through 1929 (Crockett & Kauffman, 1999). However, as the Great Depression approached, and budgets for education were reduced, educational opportunities for individuals with special needs were also reduced. It was not until after World War II, when disabled vets returned to the United States and the GI Bill

made disability and education irrevocably linked, did the needs of disabled children come to the forefront again (Crockett & Kauffman, 1999).

Civil Rights

Unfortunately, the results of war have historically served to highlight the plight of the disabled. As disabled veterans returned home from war with conditions that made their participation in society more difficult, legislation was enacted to assist them in their transition back into life and the workforce (Crockett & Kauffman, 1999). After World War I the Rehabilitation Act of 1918 provided rehabilitation services to veterans returning home. This civil rights legislation was amended in 1973 to include Section 504 which forbade the exclusion of persons with disabilities from any program receiving federal financial assistance (Rehabilitation Act, 1973). This section also stipulated that federal assistance in the form of “aids and services,” such as making buildings accessible to physically handicapped individuals and providing translation services to those who are deaf, would be afforded individuals with disabilities (Rehabilitation Act, 1973, p. 44). This meant that students with disabilities who needed such aids and services were able to access them through this legal provision. Civil rights legislation focusing on the rights of the disabled was expanded to educational environments during the 1950s.

The civil rights legislation *Brown v. the Board of Education of Topeka* in 1954 highlighted the issue of educational equity and overturned the “separate but equal” finding in the *Plessy v. Ferguson* racial segregation case of 1896. The U.S. Supreme Court ruled in *Brown v. Board* (1954) that separate educational settings based on the race of students was inherently unequal, and that all educational facilities and opportunities

should be available to all children regardless of race. This established an equal access doctrine. *Brown v. Board* (1954) also determined recognition of the concept of equal protection under the law for educational access and provided a framework from which to advance the educational rights of children with disabilities (Ashbaker, 2011).

Parental Activism

Parents of children with disabilities were able to capitalize on the advances of the civil rights movement to challenge local education authorities (LEA) in the courts to promote their children's inclusion in regular, neighborhood schools and open enrollment for students with disabilities. In 1972 a group of parents and the Pennsylvania Association for Retarded Children (PARC) sued the state of Pennsylvania, challenging a law that deemed certain children uneducable and thus unable to benefit from a public school education (Ashbaker, 2011). The court decision established that children with disabilities had a right to free public education and training, and due process must be followed in informing and involving parents in decisions regarding the placement of their children (*Pennsylvania Association for Retarded Children v. Commonwealth of Pennsylvania*, 1971).

Also in 1972, a group of children with disabilities was denied entry into school because of the expense to educate them, prompting the case *Mills v. Board of Education of the District of Columbia*. The District of Columbia requested "millions of dollars to improve special education services in the District of Columbia" (*Mills v. District of Columbia*, 1972, p. 9) from Congress before they would educate the children and, in their defense noted,

These defendants divert millions of dollars from funds already specifically appropriated for other educational services in order to improve special educational services. [The District of Columbia] suggest[s] that to do so would violate an Act of Congress and would be inequitable to children outside the alleged plaintiff class. (*Mills v. District of Columbia*, 1972, p. 9)

In their finding the court cited *Brown v. Board* (1954) and its equal protection and due process doctrines in finding in favor of the students, and also established that a lack of funds is not an acceptable reason to deny students access to a free and appropriate education.

According to Crockett and Kauffman (1999), in the early 1970s at least 2 million students with special needs were not being included in school. This circumstance led to increased parental activism and involvement within the court system to compel states to include students with disabilities in their classrooms. During the period of the *PARC* and *Mills* decision there were an additional 36 court decisions, over 27 states, to address issues of educational access for children with disabilities (Ashbaker, 2011). There was a clear need for federal legislation to address the issue of access to education and training for millions of students with disabilities.

Key Legislation: The IDEA, a Free and Appropriate Public Education, and the Least Restrictive Environment

The civil rights movement and parental activism led to key legislation that addressed the issue of equal educational access for individuals with disabilities. A review of the IDEA, a Free and Appropriate Public Education (FAPE), and the Least Restrictive

Environment (LRE) is provided to establish a policy foundation for this study. The legal analytic frameworks that have been created for determining LRE in the courts and the framework used by the Fourth Circuit Court, in rulings guiding the Commonwealth of Virginia, are also reviewed.

IDEA

In 1975, Public Law 94-142, the Education for All Handicapped Children Act (EAHCA), was enacted, giving educational access and due process rights to children with disabilities (Crockett & Kauffman, 1999). The EAHCA was amended in 1983 to provide additional services, and amended again in 1986 making clear that Section 504 of the Rehabilitation Act, requiring states to provide accommodations to individuals with disabilities if they receive federal funds, and the EAHCA could work concurrently for the benefit of children with disabilities (Ashbaker, 2011). In 1990, the EAHCA was reauthorized and renamed the Individuals with Disabilities Education Act (IDEA); it was in this year that autism was included as a specific disability covered by this legislation (Ashbaker, 2011; IDEA, 2004). The IDEA was amended in 1997, and again in 2004, when the name was again changed to the Individuals with Disabilities Education Improvement Act (IDEIA); although it is commonly still cited in its shortened form as the IDEA (Ashbaker, 2011; IDEA, 2004).

A Free and Appropriate Public Education (FAPE)

The IDEA (2004) mandates that all students deserve a free and appropriate public education or FAPE. The central tenants of FAPE include several provisions that, when in place, will create the environment for an appropriate education, leading to students with

disabilities achieving their full potential, self-sufficiency, and independent living. Among these provisions is an individualized educational program (IEP) for each child and placement in the least restrictive environment, to the maximum extent appropriate, (IDEA, 2004, § 612 (a) (5)). However, it must be noted that in 1983, in *Johnson v. Ann Arbor Public Schools*, the court held that the least restrictive environment mandate was secondary to that of providing students with disabilities FAPE (as cited in Osborne & Dimattia, 1994). The LRE provision is a means to FAPE, or an appropriate education, and not to be presumed as superior to more restrictive settings if those settings are necessary to provide a student with an appropriate education (Crockett & Kauffman, 1999; Osborne & Dimattia, 1994).

Part B of IDEA outlines the responsibilities of the act for school-aged children from 3 to 22. States measure their progress in implementing this act through 20 indicators; the 5th indicator requires the states to indicate how much participation, or time, students with special needs attend school in general education settings with their nondisabled peers (National Dissemination Center for Children with Disabilities, 2012). The LRE provision of the IDEA affords students with disabilities the right to attend general education classes with their nondisabled peers when possible.

Least Restrictive Environment (LRE)

The least restrictive environment (LRE) provision of the IDEA ensures that students with disabilities are included in the general education environment with typical peers “to the maximum extent possible” and with “the use of supplementary aids and services” if necessary (IDEA, 2004, § 612 (a) (5)). Some of these supplementary aids and

services may include assistive technology such as computers or word processors for students who have difficulty with handwriting, sign language interpreters, devices that can translate written text into an audio format (Ashbaker, 2011), consultation with other professionals, behavior management plans, and staff training (Bartlett, Weisenstein, & Etscheidt, 2002). It is only if the “nature or severity” (IDEA, 2004, § 612 (a) (5) (a)) of the child’s disability does not allow for a satisfactory educational experience that the child will be educated in a more restrictive environment in order to achieve FAPE.

The LRE provision is somewhat ambiguous in that it does not explicitly define what a least restrictive environment is or, for that matter, what specific supplementary aids and services can be provided. This ambiguity has necessitated that the courts step in to more clearly define how this provision is applied and interpreted. Some key court cases have shaped the provision and application of the LRE mandate since its original inclusion in the EAHCA in 1975. In 1985 the U.S. Supreme Court found that a special education program must occur in the least restrictive environment in order for it to be considered appropriate. The *Board of Education of Hendrick Hudson Central School District v. Rowley* (1982) is a benchmark case that established that necessary aids and services must be provided to students so that they may pass the class and progress to the next grade, and that necessary aids and services would be provided regardless of the individual circumstances of the case (Crockett & Kauffman, 1999). Additional cases impacting LRE in Virginia are discussed further, within the context of circuit court jurisdiction, in the next section.

Legal analytic frameworks for applying LRE. Several analytic frameworks have been used by the courts to guide their decisions in determining if a school division has met its requirement to provide LRE (Crockett & Kauffman, 1999); which analytic framework a state uses is dependent on which circuit court has jurisdiction. Court decisions made in the U.S. Supreme Court are binding for all states; however, each circuit court dictates the rule of law for the states that fall under its jurisdiction (Osborne & Dimattia, 1994). For the Commonwealth of Virginia, along with Maryland, North Carolina, South Carolina, and West Virginia, that jurisdiction is the 4th Circuit Court (Osborne & Dimattia, 1994). The *Daniel R. R. 2-Prong Test* (*Daniel R. R. v. State Board of Education*, 1989) is the test applied in the 3rd, 4th, 5th, and 11th Circuits (Crockett & Kauffman, 1999) to determine if local education authorities (LEA) have made a successful attempt at providing LRE (Osborne, 1994). The test requires that the court make two determinations: (a) assess whether a student can satisfactorily access academic content in a general education classroom and (b) if not, and a special education placement is required, a decision is made as to whether the LEA attempted inclusion to the maximum extent appropriate (Crockett & Kauffman, 1999; Osborne, 1994). The court looks at whether the LEA has made several determinations in evaluating whether or not part one of the test has been met, such as, (a) has the student received appropriate aids and services, (b) can the student benefit from the regular education curriculum, (c) will the general or special education setting provide more benefit to the student, and (d) what impact will the student have on other students in the classroom (Crockett & Kauffman, 1999).

The legal analytic framework for applying LRE in the Commonwealth of Virginia. The Commonwealth of Virginia is in the Fourth Circuit Court, and thus is covered by the *Daniel R. R. Test*, a decision-making framework first adopted in the Fifth Circuit Court of Appeals. Although the *Daniel R. R. Test* was adopted in the Fifth Circuit Court, courts in other jurisdictions may consider decisions made in other appeals courts (Osborne & Dimattia, 1994), and the Fourth Circuit is one of several that apply this test. Two LRE cases involving students with autism were decided in the Fourth Circuit: *DeVries v. Fairfax County School Board* (1989) and *Hartmann by Hartmann v. Loudoun County Board of Education* (1996/1997).

In *DeVries v. Fairfax County School Board* (1989) the parents of a high school-aged young man with autism and low cognitive functioning sought to have their son, Michael, included in their local high school instead of in a private vocational program (Hersh & Johansen, 2007; Osborne & Dimattia, 1994). The courts ruled that Michael's cognitive functioning was such that even with supplementary aids and services he would not have been able to access the general education curriculum (Osborne & Dimattia). In this case the court found that the educational benefit Michael would have derived from a less restrictive environment was not evident and that his access to FAPE would best be served in an alternate, more restrictive placement (Hersh & Johansen).

In *Hartmann by Hartmann v. Loudoun County Board of Education* (1996/1997), 11-year-old Mark's parents objected to the recommendation that he be sent to another elementary school to attend an autism program that would have allowed only partial inclusion (Crockett & Kauffman, 1999). A manifestation of Mark's autism was that he

had difficulty communicating, and as a result was disruptive in class. Mark had been in a general education classroom but Loudon County reported that he did not make adequate progress (Crockett & Kauffman, 1999). The district court found that the parents' wish to have Mark in a general education classroom was appropriate and cited poor teacher training and inadequate attempts at inclusion (Crockett & Kauffman, 1999). However, the Fourth Circuit Court overturned the decision on the grounds that the local LEA's efforts were not taken fully into account and in doing so established a three-prong test that determines when inclusion is *not* required: (a) no educational benefit would be derived in a general education setting; (b) a small educational benefit in an inclusive setting would be outweighed by a larger educational benefit in a separate, less inclusive setting; and (c) the student is disruptive in an inclusive setting (Crockett & Kauffman, 1999). The court also stated that the presumptive right of inclusion for social benefits did not outweigh the educational benefits from a less inclusive setting (Crockett & Kauffman, 1999).

These decisions highlight the emphasis that the Fourth Circuit Court places on FAPE and, in cases where the educational setting is in dispute, the overall educational progress of a student will take precedent. Even though some circuit courts have decided cases based on social benefits (see *Roncker v. Walter* in 1983 and *Bonadonna v. Cooperman* in 1985), it is clear that the Fourth Circuit measures educational success primarily through academic achievement. This may be problematic for students with autism due to many of the social deficits that characterize the disorder. For students with HFA, the ability to socialize with typical peers and model their behavior is especially critical, as they must attain the ability to function in the greater society if they are to be

successful. However, in policy guideline documents, the Commonwealth of Virginia (VDOE, Office of Special Education and Student Services, 2010b, 2010c, 2011) has articulated the importance of socialization with typical peers as central to the social development of students with autism as well as critical to attaining their postsecondary goals. In its ruling in *Hartmann by Hartmann v. Loudoun County Board of Education* the court emphasized its inclination to defer to the LEA's decision in determining LRE. This gives a great deal of weight to the judgment of the school division in making placement decisions for students with autism. However, there is recognition that all placement decisions must adhere to the requirements of federal statutes.

In Superintendent's Memo 198 (Commonwealth of Virginia, Department of Education, 2008), dated August 29, 2008, sent to all school division superintendents in Virginia, Superintendent of Public Instruction for the Commonwealth of Virginia Billy K. Cannaday, Jr., clarified LRE and access to all academic environments for students with disabilities. This memo reminded local education agencies (LEAs) of the legal requirements of LRE and that students with disabilities would have access to "academically challenging programs and courses offered within their school divisions and in conjunction with other divisions."

The memo references prior practices of "conditioning participation in an accelerated class or program for a qualified student with a disability by requiring forfeiture of special education or related services to which the student is legally entitled" and reminds LEAs that such practices are "in direct violation of Section 504 and Title II regulations." Furthermore, school divisions are cautioned about ignoring the individual

needs of the student: “the requirement for individualized determinations is violated when schools ignore the student’s individual needs and automatically deny a qualified student with a disability the needed related aids and services in an accelerated class or program.” Additionally, the Commonwealth acknowledges in the memo that the provision of needed aids and services to access academic environments is required.

Because participation by a student with a disability in an accelerated class or program is generally considered part of regular education or regular classes referenced in Section 504 and IDEA, an LEA may not deny that student the needed related aids and services in these programs or courses.

Impacts of Beliefs, Attitudes, Education, and Experience of Teachers and Administrators, and Institutional Structures and Policies, on Least Restrictive Environment for Students with Autism Spectrum Disorder

Research findings (Barned, Knapp, & Neuharth-Pritchett, 2011; Horrocks, White, & Roberts, 2008; Praisner, 2003) indicate that the beliefs and attitudes of teachers and administrators, and their level of education and experience in and with special education, students with disabilities, and autism, have an effect on the inclusive practices of students with ASD. Teachers and administrators are part of the decision-making process for educational placements of students with autism, and sometimes due to a lack of education and experience are not as adept in making informed placement decisions that would accommodate the requirements of LRE. This may adversely affect the inclusion of these students in academic environments that are more challenging and may also limit the

ability of these students to develop their academic and behavioral strengths due to a focus on their academic and behavioral weaknesses.

Beliefs of School Staff

Several studies (Barned et al., 2011; Horrocks et al., 2008; Praisner, 2003) have focused on the attitudes and beliefs of teachers and administrators about inclusion and autism, and have shown how these attitudes and beliefs impact academic placements. In 2003 Praisner examined the impact of training, education, and experience on the attitudes of 108 elementary school principals and how these impacted placement decisions. Results showed that 21.1% of principals were positive about inclusion whereas 76.6% were uncertain about including students with disabilities in less restrictive environments. The more education and experience a principal had with inclusion of special populations, the more positive his or her attitude was toward inclusion. Additionally, placement decisions in less restrictive education settings increased with higher scores of positive attitudes toward placing students with disabilities in general education settings and the experience level of the principal. This poses a problematic situation for students with autism, as the percentage of principals who had no experience with autism was relatively high at 28.3%. Praisner (2003) also found that students with autism were recommended less often for general education environments and more often for special schools and self-contained settings than students with other disabilities. Students with autism were recommended for the most inclusive, general education settings by 30.1% of the respondents, compared to 93.7% of students with speech and language impairments or 81.9% of students with specific learning disabilities. Also, students with autism were recommended for the most

restrictive, alternative schools or special education, self-contained settings by 49.8% of the respondents, as compared to students with speech and language disabilities at 1.6%, or with specific learning disabilities at 1.8%.

Horrocks et al. (2008) surveyed 571 Pennsylvania public school principals of all grade levels to assess whether their attitudes toward students with autism impacted the class placement of these students. Principals who believed in the inclusion of students with autism in general education classrooms consistently recommended higher academic placements than principals who did not believe in general education inclusion.

Elementary school principals were more likely to recommend students with autism be included in general education classrooms. As well, principals who had formal training in ASD recommended placement more frequently for students who had a profile that included social detachment. Principals were also more likely to recommend students be included in a general education setting if they showed high academic achievement. The researchers recommend principals to participate in formal training about inclusive practices to ensure that students with ASD are appropriately placed in academic settings.

Barned et al. (2011) surveyed 15 early childhood preservice teachers to determine their knowledge and attitudes about including students with autism in general education classrooms. Results showed that 53.3% of the preservice teachers felt that students with autism should only be educated in a special education classroom. Findings also showed that preservice teachers had many misconceptions regarding the characteristics of ASD, with 66.7% of the teachers assuming that students with ASD were homogeneous in their characteristics and abilities. As well, a general theme throughout the follow-up interviews

with four of the preservice teachers was that a benefit of inclusion was that students with ASD would become more “normalized” (p. 314). A lack of knowledge on how to accommodate students with ASD was also evident. All participants expressed the need to know more about ASD and noted that they did not learn as much about autism as they did about other disabilities in their teacher preparation program.

In 2012, Sansosti and Sansosti expanded on prior research with a phenomenological study of the attitudes of 15 educators on the inclusion of individuals with HFA in general education classrooms. The participants worked at four elementary schools, pre-K through fifth grade, with autism inclusion programs, and included a school principal, an assistant principal, a behavior specialist, a school psychologist, and general and special education teachers. The participants took part in two focus group sessions and individual interviews. The analysis of the data revealed that all the participants had positive views of inclusion and acknowledged that inclusion significantly improved the academic and social skill development of individuals with HFA. The most significant barrier to successful inclusion identified was the limited understanding of HFA by teachers. Over half of the participants identified limited training for teachers in ASD that led to stereotyping of students as lower functioning individuals.

Participants identified several factors that influenced placement decisions of individuals with HFA. A successful candidate with HFA for inclusion in general education classrooms possessed characteristics such as emotional control, the ability to work independently and problem solve, the ability to respond well to classroom rules and peers, and behaviors that were not too disruptive. Several participants cited the

availability of school resources and personnel as factors in including individuals with HFA in general education classrooms. With a lack of school resources to include these students, the participants noted that some students were sent to schools with more resources or “may be recommended for a more restrictive placement, even when the team has evidence to suggest the student could be successful in inclusion with the appropriate support” (p. 927).

Several participants felt that an inconsistent district policy allowed some neighborhood schools to transfer students with HFA to “autism” (p. 927) schools even though they had the resources in place to provide services at the student’s neighborhood school. Sansosti and Sansosti (2012) suggested future research should include studies that look at the relationship between positive postsecondary outcomes, for example advanced education and employment, and inclusion in general education settings. As well, the researchers suggest, “controlling for relevant personal characteristics that likely contribute to these outcomes would be an essential part of such a study” (p. 930).

In a mixed-method dissertation exploring high school teachers’ attitudes on the inclusion of students with HFA, Kieran (2012) interviewed five teachers about inclusion of students with HFA. Findings indicated that three out of the five teachers were concerned about how to determine the most appropriate LRE for students; the two remaining teachers did not discuss LRE as a factor in inclusion. Strategies suggested to establish LRE were team collaboration, the continuum of services available to the team, the willingness and ability of teachers to implement intervention strategies with fidelity, and “how teams work through the legal issues of inclusion” (p. 142).

Institutional Structures and Policies

Concerns about district policies have been raised in other studies (Kurth & Mastergeorge, 2010; Schultz, 2012) and that the inclusion practices of school divisions, not the intellectual abilities of students, were the deciding factor in students' academic placements. Kurth and Mastergeorge (2010) examined the long-term impacts of educational setting on 15 adolescent students with autism. Results revealed that educational placements were determined by district policy, and the student's geographic location, more than a student's characteristics or abilities. In a search of IEP records, the researchers determined that there was little information regarding the decisions that led to the educational placement of two groups of students, one group in inclusive, general education classrooms and the other group in self-contained schools or classrooms. The factor that determined whether a student was placed in a general education, fully inclusive setting or a special school or self-contained setting, was where he or she lived.

In 2012, Schultz found institutional structures and policies impacted whether or not students with disabilities were allowed to access advanced placement (AP) classes. In this study three LEAs were profiled; districts one and two had policies that inhibited the inclusion of students with disabilities in their AP and advanced academic programming, whereas students with disabilities were encouraged to participate in the enriched programs of a third district. District one prided itself in adhering to rigid selection criteria so much so that any differences in academic development would eliminate students with disabilities. The students with disabilities who did participate were told that their IEP accommodations would not be followed. District two had teachers who did not "have

time” (p. 124) to accommodate students with disabilities and expressed views that if a student needed accommodations to access the curriculum the class was not the “right place” (p. 124) for the student. Teachers in district three were open to accommodating students with disabilities in their classes and these students described a positive transition to college.

Views of Parents and Students on Least Restrictive Environment and Inclusion

The views of parents of children with autism and students who have autism regarding LRE and academic inclusion are important to explore. Parents of children with autism identify critical issues, important academic supports, and the effects of school climate in their children’s school experiences. Students with autism have a unique perspective on what they found to be important for them in accessing an inclusive academic environment.

Parents

A limited number of studies (Jackson Brewin, Renwick, & Fudge Schormans, 2008; Sciutto, Richwine, Mentrikoski, & Niedzwiecki, 2012; Starr & Foy; 2012) were identified that focused on the educational experiences of students with HFA and AS and their ability to access the least restrictive academic environment as reported by their parents. These studies address the experiences of parents and their views of the attitudes of teachers and administrators toward students with autism spectrum disorder, often showing stereotypical views that impact students’ academic placements.

Jackson Brewin et al.’s (2008) qualitative study of the quality of life for students with Asperger syndrome interviewed nine parents about their children’s experiences in

school. The researchers found parents felt that the “preconceived notions” that teachers and administrators had about the abilities of individuals with autism stigmatized their children (p. 246). Parents also reported that teachers and other school personnel did not have consistent training in autism and that this impacted how well supported their children were at school. As well, parents were concerned that the structures of the schools did not fully address their student’s unique needs nor use their children’s strengths to advance their academic progress.

In 2012, Starr and Foy expanded on the work of Jackson Brewin et al. (2008). The researchers interviewed 143 parents of students with ASD in Ontario, Canada, about their perceptions, and satisfaction of, their children’s education. Of the 143 parents, 81% of their students were in elementary school, and 17.4% were in Grades 7 through 12; the mean age of the students was 8 years, 9 months. The overall themes concerned (a) the ability of school personnel to manage their child’s behavior, (b) teacher and administrator training in ASD, (c) communication between parents and teachers, and (d) collaboration between teachers and parents. The researchers communicated the views of many parents that their children were often placed in inappropriate academic placements that did not reflect their children’s abilities and were a result of low expectations for their children. A lack of expertise by general education teachers in teaching students with ASD was cited for a lack of educationally relevant instruction, and 42% of parents expressed a need for increased knowledge of autism among classroom teachers. Some parents felt that teachers resented their children because it was inconvenient to accommodate their needs in the classroom.

Starr and Foy (2012) found a majority of parents whose children were in lower elementary school, 50% in kindergarten and 65.4% in first to third grades, were satisfied with the education their children were receiving; this was attributed to caring attitudes and the abilities of the teachers and administrators to address their children's educational and behavioral needs. However, as the students in the study aged into secondary school, satisfaction with the teachers, administrators, and the educational program declined to a low of 22.7%, for parents of students in seventh to ninth grades. Parents were concerned that their children receive an appropriate level of education that focused on their children's strengths and so their children would be able to accomplish their postschool goals and live happy, independent lives that included independence, employment, and a satisfying social life. Parents felt that the achievement of these goals was dependent on the quality of the teaching staff and the schooling their children received.

In 2012, Sciutto et al. conducted a qualitative analysis that included 59 parents of students with autism and examined their reflections about school experiences of their children with autism spectrum disorders. Similarly to Starr and Foy (2012), the researchers found that the ability of teachers to adjust to the strengths and differences of students with ASD, and modify their lesson plans accordingly, reflected better educational outcomes for these students. Parents saw small adjustments in teacher behavior and an acknowledgement of their children's uniqueness as a measure of respect all children deserve.

In a qualitative study of 21 adolescents with HFA, Camarena and Sarigiani (2014) examined postsecondary plans of the participants through interviews with high school

students and their parents. The researchers note that parents extemporaneously described, “having to ‘fight the system’ or working as a ‘constant advocate’ so that their children would receive adequate services and appropriate treatment from both teachers and peers at school” (p. 120). Echoing a finding in Hayes-Harris (2012) about parents using social capital to ensure services are provided to their child in school, one mother in the study reported, “[if] teachers see me at school helping out, they’re more likely to provide services” (p. 120). Camarena and Sarigiani discuss the resources that benefit—and the obstacles that impede—educational achievement for this group of students. Key supports identified for academic success were trained staff students could use as resources and social supports that could be used in class and in living situations. Academic obstacles identified were coursework load and challenging curriculum, lower academic skills and capacity to achieve, and the provision of academic accommodations. Additional findings of this study were that all of the students in the study were struggling academically, parents and students viewed college as an avenue to develop special talents and interests, college was an avenue to a career that would provide a means of future support, and that social needs were a key area requiring assistance in a postsecondary setting. Parent and student participants stressed that programming, academic and social, must be “individualized for the child’s unique needs” (p. 124).

Students

Of the limited research that exists about academic settings for students with ASD focuses on the social contexts and impacts of school on students as reported by parents, teachers, and administrators. The research about academic placements and their affect on

the academic and career goals of students with ASD, from the point of view of students with ASD, is minimal. However, findings regarding academic experiences of students with ASD and HFA may be included in studies researching other aspects of ASD.

In a study of 20 secondary students with autism in England, Humphrey and Lewis (2008) found that students who were able to share their special knowledge, and subsequently were viewed as accomplished in some way, were able to build more positive peer relationships. This led to increased self-confidence and pride in their abilities. Additionally, the researchers found that students with ASD often expressed frustration that their classroom teachers had little training in ASD, or students with disabilities, and as a result did not understand their behaviors and were unable to modify the curriculum. Also students related that additional supports were important in enabling them to access the curriculum.

Müller, Schuler, and Yates (2008) asked 18 adults of various ages, genders, and ASD diagnostic criteria to discuss their social experiences and how they became socially connected. Some of the data concerned the participants' school experiences. The researchers found that individuals with ASD found small group academic environments preferable to large classroom placements; students described feeling lost on large campuses and in large classrooms. Participants described a small group work where group members were working toward a common goal as a productive academic setting where they felt comfortable.

Similar findings were communicated in a qualitative study by Madriaga (2010) where eight college-aged (18-22, one 30) individuals with ASD were asked about their

experiences negotiating the spaces on a university campus. This study used a grounded theory approach to determine, through interviews using open-ended questions, what individuals with ASD felt about accessing social environments on campus. About half the participants described their avoidance of crowded noisy spaces such as the on-campus restaurants and pubs; the other half did not find these environments uncomfortable but still had difficulty connecting with their peers. Participants described environmental preferences for smaller groupings of people, and found social success within special interest groups such as musical groups and a science club. Participants described accommodations such as individual rooms, social supports, and access to specialists in student services as important contributors to a feeling of safety on campus.

Saggers, Hwang, and Mercer (2011), in a qualitative study using open-ended interview techniques, asked nine secondary students in Australia about their experiences in high school. The researchers found that students were able to be successful in general education classes if they were given support to help them access the curriculum. Some of the supports that the students found helpful were the ability to type assignments, support in negotiating social situations, and support with assignments when needed. Students described their friendships as primarily consisting of their peers in general education classes. Students cited responsive teaching as a strength; this often took the form of flexibility in the curriculum and responsiveness to a student's academic needs. Students also mentioned that some schoolwork was too easy. The researchers concluded that,

A lack of understanding of students' strengths and needs can generate a chain of difficulties. These difficulties range from failure to adapt curricula to suit

academic levels and talents, non-incorporation of students' interests and not addressing students' learning styles and needs (e.g., typing rather than handwriting). (p. 18)

The researchers also found that students often felt burdened by academic work that was not interesting to them and suggested that school staff attempt to include work that students with ASD find rewarding and that will motivate them to achieve.

In 2012, Sciutto et al. also found that responsiveness to student needs and curriculum flexibility was a key to student success. This qualitative study included 27 adults who reflected on their experiences as a student, 59 parents of students with ASD, and 8 who did not specify. Sixteen percent of the participants identified the ability of the teacher to adapt curriculum to the more advanced levels of students as a strategy or practice that had a positive effect on the academic performance of students with ASD. One parent described a first-grade teacher who was able to enrich her son's curriculum with fourth-grade materials, and an adult with ASD described how his physics teacher allowed him to focus on more advanced material and allowed him to teach the introductory lesson to the rest of his class on topics with which he was already proficient. Sciutto et al. (2012) also found that, "By focusing on the children's strengths and building on their interests, schools can facilitate learning, relieve stress, and promote social development" (p. 186). Also, if a teacher showed support and respect for, and interest in, the student with ASD, other students would follow suit and include and befriend the student with ASD.

Research including parents of individuals with ASD and individuals with ASD highlights several consistent observations regarding classroom practices and academic settings. Findings regarding teacher and administrator attitudes toward students with ASD, obtained through parental report (Camarena & Sarigiani, 2014; Hayes-Harris, 2012; Jackson Brewin et al., 2008; Starr & Foy, 2012), concur with the research regarding the attitudes of teachers and administrators (Barned et al., 2011; Horrocks et al., 2008; Praisner, 2003; Schultz, 2012) in that low expectations and a lack of training in inclusive practices result in a lack of appropriate educational placements for individuals with ASD. In order for students with ASD to be included in the LRE, and participate in inclusive, general education classrooms, training in inclusive practices is a critical component for teachers and administrators.

As well, the ability of teachers to use the academic strengths and special academic interests of individuals with ASD in formulating flexible, effective curriculum was key to academic success and mentioned by both parents of individuals with ASD (Jackson Brewin et al., 2008; Sciutto et al., 2012; Starr & Foy, 2012) and individuals with ASD (Graetz & Spampinato, 2008; Humphrey & Lewis, 2008; Sagers et al., 2011; Sciutto et al., 2012). As well, Madriaga (2010) reported the importance of special interests and talents in developing peer relationships and social opportunities and their affect on a positive academic environment for individuals with HFA.

Unfortunately, the lack of teacher training in autism and differentiating curriculum to meet the needs of individuals with ASD was a common finding (Humphrey & Lewis, 2008; Jackson Brewin et al., 2008; Sagers et al., 2011; Sciutto et al., 2012;

Starr & Foy, 2012). Accommodations were also key to student success (Camarena & Sarigiani, 2014) and included using aids such as keyboards to type assignments (Saggers et al., 2011) and support services for emotional needs (Graetz & Spampinato, 2008; Madriaga, 2010). Müller et al. (2008) and Madriaga (2010) found that individuals with ASD preferred small group settings and working collaboratively with a group to accomplish tasks.

Participation in inclusive academic environments with typical peers is a way for students with HFA to benefit from the LRE provision of IDEA (2004). The LRE provision does not use the term “inclusion” per se but the intent of the legislation is to provide inclusive educational experiences for students with disabilities in general education environments when appropriate. For students with HFA, inclusion in general education classrooms is often the least restrictive academic environment and is necessary to maximize student potential (Assouline et al., 2012; Bianco et al., 2009).

Benefits of Inclusion for Students with ASD

There are real and measureable benefits of inclusion for students with ASD. Two studies address the benefits to students of varying ability profiles who are able to access an LRE and several studies explore the positive postsecondary outcomes of an appropriate educational environment for individuals with autism.

General Education Settings

The Kurth and Mastergeorge (2010) study discussed earlier found that two groups of students with ASD, between the ages of 12 to 15 years, who had IQ scores and functional abilities in the deficient range, showed differences in academic achievement

that correlated to their academic placement. The students who received their instruction in a general education classroom scored statistically significantly higher on the WJ-III than the students in the self-contained settings. In a follow-up study with the same participants Kurth and Mastergeorge (2012) also found that students with ASD who were educated in general education classrooms received more instructional time in the core curriculum and paraeducator support was delivered more strategically than in a self-contained setting; this resulted in more independent work on the part of the students with ASD. As well, the study by Assouline et al. (2012) discussed earlier found that participation in gifted and talented programs predicted math achievement in gifted students with ASD and positive relationship to achievement in math, reading, and oral language.

Improved Outcomes as Adults

Two studies of adult outcomes for individuals with autism, Howlin et al. (2004) and Howlin, Alcock, and Burkin (2005), examined individuals with autism through a series of longitudinal studies and found that the challenges faced by individuals with HFA and AS are numerous and include lower than expected outcomes in career development and independent living. There is, however, a positive association between an appropriate academic program and future employment and economic independence. Thus, for individuals with HFA and AS who had outcomes that were considered fair, good, or very good (i.e., had some form of employment and various independent living situations) educational qualifications were key. As well, in a literature review of studies on adult outcomes of individuals with ASD between the years 1960 to 2012, Howlin and

Moss (2012) found that appropriate education was a determining factor in successful postschool outcomes but also noted that there is little research identifying the educational factors that identify success later in life.

Similarly, in a longitudinal study by Cedurland et al. (2008), 70 young men with HFA and AS, average age 21 were followed from initial diagnosis to determine their postsecondary outcomes. Of the 70 participants only 14%, or 10, attended a university, with two obtaining degrees, and 10%, or 7, were competitively employed. None of the participants held a job unless they had obtained postsecondary education. In these studies appropriate educational programming had a dramatic effect on outcomes. A study by Yokotani (2010) also showed a positive correlation between increased years of education and the ability to obtain employment for individuals with ASD. These studies show that postsecondary success is doubtful without the education necessary to access advanced educational opportunities. Without appropriate academic programming that is “reasonably calculated to confer educational benefit” (Yell, Katsiyannis, Dragow, & Herbst, 2003, p. 185) and designed to exploit a student’s potential, individuals with HFA will not be able to access the specialized postsecondary education and training they will need to achieve economic independence.

Conceptual Frameworks Used for Policy Analysis in This Study

Conceptual frameworks are theories that may help to organize the data in a study into meaningful relationships that may help explain the processes and causes of the phenomena being studied (Maxwell, 2005). For the purposes of this study, there are several conceptual frameworks that examine the causes and processes of various aspects

of the implementation of LRE for individuals with HFA in the Commonwealth of Virginia. The Mutual Adaption Framework (Datnow & Park, 2009; McLaughlin, 1987, 1990) can assist in examining the local implementation of a federal mandate, the least restrictive environment provision of the IDEA (2004). The Hasazi, Johnston, Liggett, and Schattman Six Factor Framework (Hasazi, Johnston, Liggett, & Schattman, 1994) specifically examines the processes and causes of the state and local implementation of LRE, whereas the IDEA (2004) lays out the framework for states to measure their compliance with the regulations set forth in the LRE provision. As well, Virginia has set forth a framework for the best practices in serving students with ASD and in transitioning them to postsecondary career and educational options (VDOE, Office of Special Education and Student Services, 2010b, 2010c, 2011).

Mutual Adaption

The mutual adaption framework serves to examine how local implementation of federal policies can effectively change the federal policy. McLaughlin (1990) defined mutual adaption as “the adaptation of a project and institutional setting to each other” (p. 12) whereas Datnow and Park (2009) define the policy process of mutual adaption as a difference in the way a policy is formulated from the top and the way it is implemented at the bottom. Datnow and Park (2009) see mutual adaption as a “bottom-up policy design process” (p. 349) where implementation is a critical factor. This emphasis on implementation is also shared by McLaughlin (1987) who discusses how “implementation dominates outcomes” (p. 172) and shapes policy for the benefit of the local authority and not necessarily the policy originator, often the federal government. It

is the implementation piece of the mutual adaption framework that is most prevalent in how the least restrictive environment mandate of IDEA (2004) is operationalized at the local level. The mutual adaption framework recognizes the context of the local authority in implementing policy. Several factors influence how a large, far-reaching policy is implemented at the local level: McLaughlin (1987) cites local capacity to implement the policy, local commitment in implementing the policy, and how competing priorities influence the implementation of a policy. McLaughlin (1990) points out that the local implementation of policy is not necessarily a result of the response to the policy objectives or strategies as originally intended because these may have no bearing on the realities of the day-to-day running of the school. The contextual realities of the localities implementing policy are the driver of what that policy will look like executed at the local level.

The capacity of the LEA to implement policy requires the allocation of resources to bring about their implementation (McLaughlin, 1987). This does not mean only resources of money, time, and personnel but also resources in the form of social and political capital, or the ability to develop resources that may not be currently present but could be developed. The allocation of time and money to train teachers to include students with autism so these students can participate at any academic level is problematic. The funding stream initially pledged by the federal government to support IDEA, Part B initiatives has never reached the amount promised and, under current fiscal constraints, does not appear to be forthcoming (New America Foundation, 2014). Without adequate monetary support from the federal government, allocating resources for

additional teacher training so that all students can be included in the general education setting will not be a reality for most local education authorities. As well, the allocation of time to develop these resources requires the expenditure of social and political capital that may be used to develop resources for more pressing, competing priorities. The will to develop these resources is also a challenge.

Attitudes and motivation are an aspect of the will of local authorities to implement a policy (McLaughlin, 1987), as the will and commitment of the local implementers of LRE are critical to its successful administration. As outlined earlier, research shows that the attitudes of administrators are a critical indicator of whether students with autism will be included in general education settings (Horrocks et al., 2008) and whether or not students with disabilities will have access to AP classes (Schultz, 2012). The support of these decision makers is a crucial factor in not only the implementation of the policy, but in the continuation of its goals (McLaughlin, 1990).

Also, the failure of the LRE statute to specifically define what a least restrictive environment is has contributed to an ambiguity that does not lend itself to a vigorous defense by individuals who are not motivated to fully implement the policy. The commitment of district leadership to implement a policy is also linked to the value they place on the policy and, if the policy has aspects of it that are vague, this may encourage a mere pro forma implementation (McLaughlin, 1987). For example, a school may state that LRE is available to students with disabilities but not offer the support of supplementary aids and services so those students may access LRE.

The influence of individual participants on the implementation of policy is also a critical aspect of the mutual adaption framework. The application of the LRE mandate is at its very heart a bottom-up initiative in that individual superintendents and principals are critical to its successful implementation. If they do not have the capacity or motivation to implement the original policy, then the result will not fulfill the intent of the policy. McLaughlin (1987) states that a “policy is transformed as individuals interpret and respond to it” (p. 174); this transformation may reflect the need to prioritize which policies have the highest benefits when compared to cost. The need to implement LRE effectively may seem inconsequential when compared to performance on accountability measures such as student performance on standardized tests or a teacher’s effectiveness rating. These competing priorities compel individuals at the local level to manipulate the policy to conform to their needs and contexts. If there is no money to provide supplementary aids and services, the LRE policy will be molded to conform to those realities. For example, if it is more important that students meet minimum requirements on tests, then the local districts will be incentivized to keep students in restricted environments that will enable them to meet minimum test requirements and not to provide a challenging curriculum that may require more resources.

The mutual adaption framework recognizes the local context of policy implementation and is a fitting conceptual framework from which to examine the LRE policy. The individuals at the state, school division, and school level are the drivers of this policy and are the true architects of what is ultimately experienced by the student. Simply by declaring that a policy has the full force of the law does not guarantee that the

way it was conceived at the macro, or federal, level will be what is implemented at the micro, or local, level. When evaluating the outcomes of the LRE policy one has to consider the contexts existing at the local level and attempt to build communication structures that encourage true mutual adaption where the needs of the individuals implementing the policy are acknowledged and accommodated to create a more effective policy.

Hasazi et al.'s Six-Factor Framework

Hasazi et al. (1994) identified a six-factor framework from which to analyze the implementation of LRE at the state and district level. The six factors are finance, organization, advocacy, implementers, knowledge and values, and state and local; all play a role in how stakeholders interact and implement the policy. As well, existing institutional structures were molded and influenced by these six factors and, depending on whether the districts were low users or high users of LRE, dictated how these factors played into their decision-making.

Hasazi et al. (1994) found that LEAs that used more restrictive environments in educating their students with disabilities deferred to the existing structures and policies that were already in place. If the resources—time, personnel, and money—were not made available to add to these existing resources, no effort was made to supersede precedent and recreate existing structures. However, in LEAs that had a commitment to inclusive education, the resource limitations were viewed as an opportunity to think creatively and implement new, innovative programming to achieve LRE goals. The important motivator, and difference between these two approaches, appears to be the core values

and ethics held by the decision makers responsible for the implementation of education policy.

Attitudes of state and local decision makers regarding the inclusion of students with disabilities in general education settings have also contributed to the lack of motivation to enforce the LRE mandate. Knowledge building is as critical a strategy as changing values about disability and autism. Knowledge built from research and best practices is the key to changing views of what can be possible in teaching and including students with disabilities in all academic environments. Again, knowledge building need not be expensive and can be incorporated into existing literature and programs without a large outlay of funds. Hasazi et al. (1994) observed that knowledge building surrounding LRE was accomplished through increasing instructional skills among general education teachers, and increasing awareness of inclusion, peer coaching, and other interventions that would facilitate an increase in inclusion. However, once there is sufficient knowledge in including all learners in environments appropriate for their academic growth, there must be appropriate supports for the teachers who will teach these students. These supports have to be ensured, and provided for, by the administrators at the division and school level.

Hasazi et al. (1994) found that the largest hurdle for inclusion appears to be, in many respects, the attitudes and beliefs of decision makers. With the establishment of values and ethics to include students with disabilities, in conjunction with increased knowledge and awareness of disability and autism, an environment of inclusion can be fostered. Often as the outlook of administrators at the division and school level change,

the practices of teachers also begin to become more inclusive and the adoption of creative solutions to educate every student becomes the norm (Hasazi et al, 1994). District and school administrators note the influence of parents in shaping policy at the school level, often citing the ability of parents to exercise their rights through the court system as a motivation to concede to their requests for inclusion (Hasazi et al, 1994). Although this power is often blunted by a lack of organization, it is nevertheless an important influence and is a potential avenue for the development of this policy in the future.

Virginia's Compliance with IDEA's LRE Requirement

The federal government measures a state's compliance, and progress, in implementing IDEA, Part B by requiring states to file a *Part B, Annual Performance Report* which indicates the compliance or noncompliance of each of its school divisions on 20 quality indicators each state must meet to qualify for federal funding under IDEA (2004), Part B and provides the federal Office of Special Education Programs with the state's plans for remediating any deficiencies. Indicator five measures compliance with the least restrictive environment requirement of IDEA, Part B and indicates how much time students with special needs, aged 6-21, attend school in general education settings with their nondisabled peers. The federal government began to measure LRE compliance with a percentage of time within the general education setting, as opposed to time spent outside of the general education setting, beginning with the 2005-06 school year (U.S. Department of Education, 2013); this was done in an attempt to increase the reliability of the data (McLeskey, Landers, Williamson, & Hoppey, 2012). There are three parts to indicator five: Indicator A measures the percentage of children with IEPs, aged 6-21, that

were inside regular education classes more than 80% of the day; Indicator B measures the percentage of children who were inside regular education classes less than 40% of the day; and Indicator C measures the percentage of children whose education was served in public or private separate schools, residential placements, or homebound or hospital placements (IDEA, 2004, 20 U.S.C. 1416, § 616). A high percentage is desirable for Indicator A and low percentages are desirable for Indicators B and C.

If the Commonwealth of Virginia, or any of its school divisions, fails to comply with the requirements of IDEA, or does not show sufficient progress with the 20 quality indicators within Part B, then all or a portion of the federal block grant may be withheld from the Commonwealth until such time as they are in compliance with the requirements (IDEA, 2004, 20 U.S.C. 1416, § 616). As of April 24, 2014, according to the *Commonwealth of Virginia, Part B Annual Performance Report for 2012-2013 (2014a)*, the Commonwealth of Virginia is out of compliance with all or part of indicator five in the following order, from greatest to least: Indicator B which measures how many students with special needs were inside general education classes less than 40% of the day; Indicator C which measures the percentage of children whose education was served in public or private separate schools, residential placements, or homebound or hospital placements; and Indicator A which measures how many students with special needs are inside general education classes more than 80% of the day. The Commonwealth has identified improvements that it wishes to undertake to increase the participation of students in general education settings. These improvements will be discussed in the

review of the Commonwealth's state performance plan (Commonwealth of Virginia, 2014b).

The Commonwealth outlined its goals through 2013 in the *Commonwealth of Virginia, Part B Annual Performance Report for 2012-2013* (2014a). The targets and actual percentages for indicator five for the school year 2012-2013 are:

- A) Indicator 5A target - 68% of students with disabilities would spend at least 80% of day in the regular education class; actual percentage 52.2%
- B) Indicator 5B target - 8% of students with disabilities ages 6-21 would spend less than 40% of the day in the regular classroom; actual percentage 12.6%
- C) Indicator 5C target - Less 1% of students with disabilities ages 6-21 would receive their special education services in separate public or private schools, residential placements or homebound or hospital placements; actual percentage 3.6%.

The actual percentages show that the Commonwealth of Virginia has not met its annual targets for indicator five for the most current school year for which there is data, 2012-2013. Unfortunately, when compared to prior years, the numbers also reflect inconsistent performance and a failure to meet this quality indicator in the percentage of students who are participating in the regular classroom over the last four years (Table 1). In a review by this researcher of the Commonwealth's *Annual Performance Reports* (Commonwealth of Virginia, 2014b) over the last eight years, from the 2005-2006 school year to present, it was found that the Commonwealth of Virginia has never met its annual performance goal for indicator five.

Table 1

Commonwealth of Virginia Least Restrictive Environment, Measurable and Rigorous Targets, and the Least Restrictive Environment Failure Rates by Percentage for School Years 2009-2010 through 2012-2013

	Failure			Failure			Failure			Failure		
	LRE S/Y	MRT S/Y	rate S/Y	LRE S/Y	MRT S/Y	rate S/Y	LRE S/Y	MRT S/Y	rate S/Y	LRE S/Y	MRT S/Y	rate S/Y
Quality indicator 5 least restrictive environment	2009	2009	2009	2010	2010	2010	2011	2011	2011	2012	2012	2012
	2010	2010	2010	2011	2011	2011	2012	2012	2012	2013	2013	2013
Children inside the regular class 80% or more	59	66	7	55.3	68	12.7	61.8	68	6.2	62.2	68	5.8
Children inside the regular class less than 40%	11	9	2	18.5	8	10.5	12.54	8	4.54	12.6	8	4.6
Children in separate schools, residential facilities, or homebound/hospital placements	3.2	>1	2.2	3.5	>1	2.5	3.6	>1	2.6	3.6	>1	2.5

Note. Percentages > targets are in boldface. LRE = Least Restrictive Environment; S/Y = School Year; MRT = Measurable and Rigorous Target.

The Commonwealth of Virginia acknowledged its poor performance in meeting indicator five and outlined a program of improvement in the latest (April 24, 2014) version of the *Part B State Performance Plan 2005-2012* (Commonwealth of Virginia, 2014b). The program of improvement outlined the following improvement activities, timelines, and resources that the Commonwealth would undertake to achieve improvement under indicator five:

- A) The VDOE continued to provide training and technical assistance on the need for and use of assistive technology with a focus on access to the general curriculum and support for including students with disabilities in general classrooms and community settings.
- B) The VDOE and its Training/Technical Assistance Centers (T/TACs) will continue to disseminate information and implement professional development with ongoing coaching and modeling of effective inclusive practices, including differentiating instruction, co-teaching [sic] and collaboration.
- C) The VDOE will continue to encourage and facilitate embedded professional development with Training and Technical Assistance Center staff in select target schools where students with disabilities did not meet the AMOs [Annual Measurable Objectives].
- D) The VDOE Division of Special Education and Student Services has now fully integrated the Office of Special Education Program Improvement. The Office of Special Education Program Improvement is responsible for implementing the provisions of the Elementary and Secondary Education Act (ESEA)

Flexibility Waiver that includes: providing training and technical assistance to target schools where students with disabilities did not meet the Annual Measurable Objectives (AMOs) and training and technical assistance are also aimed at preparing students with disabilities to be college and career ready. (p. 27)

In the Commonwealth's *Part B Annual Performance Report for 2012-2013* (Commonwealth of Virginia, 2014a) activities 15, 18, 63, and 80 were proposed to improve performance for indicator five as follows:

- 15) The VDOE continued to provide training and technical assistance on the need for and use of assistive technology with a focus on access to the general curriculum and support for including students with disabilities in general classrooms and community settings. (p. 63)
- 18) The VDOE and its Training/Technical Assistance Centers (T/TACs) will continue to disseminate information and implement professional development with ongoing coaching and modeling of effective inclusive practices, including differentiating instruction, co-teaching [sic] and collaboration. (p. 63)
- 63) The VDOE will continue to encourage and facilitate embedded professional development with Training and Technical Assistance Center staff in select target schools where students with disabilities did not meet the AMOs. (p. 66)
- 80) The VDOE Division of Special Education and Student Services has now fully integrated the Office of Special Education Program Improvement. The Office

of Special Education Program Improvement is responsible for implementing the provisions of the Elementary and Secondary Education Act (ESEA) Flexibility Waiver that includes: providing training and technical assistance to target schools where students with disabilities did not meet the Annual Measurable Objectives (AMOs) and training and technical assistance are also aimed at preparing students with disabilities to be college and career ready. (p. 67)

Neither the *Part B State Performance Plan 2005-2012* (Commonwealth of Virginia, 2014b) nor the *Part B Annual Performance Report for 2012-2013* (Commonwealth of Virginia, 2014a) address the repeated failure of the Commonwealth to successfully meet its own performance indicator in providing LRE to its students with disabilities. Additionally, the Commonwealth does not address the apparent failure of its repeated improvement measures in helping the Commonwealth meet its obligations under indicator five of the IDEA (2004).

Virginia's Best Practices for Students with ASD

The Commonwealth of Virginia publishes several documents that can be used to view and analyze their performance in serving the students of Virginia with ASD and their compliance with the requirements of the LRE provision of the IDEA (2004). *The Models of Best Practice in the Education of Students with Autism Spectrum Disorders* (VDOE, Office of Special Education and Student Services, 2011) describes the context within which academic practices will be applied to educate students with ASD in Virginia. Some of those practices include: matching curriculum to the individual needs of

the student to ensure motivation, a maximized learning rate, and stable behavior; acknowledging the heterogeneity of the academic abilities students with ASD, to include giftedness; providing a curriculum and academic setting that best meets the learning needs and develops the strengths of the student; and stating their responsibility for providing opportunities for socialization in general education settings. As well, the Commonwealth acknowledges its responsibilities in providing the least restrictive environment for students with ASD.

Pilot Study

Pilot studies are important in the research process as they may work to determine the “meanings and perspectives” (Maxwell, 2005, p. 58) held by the participant group being studied. In this study, the pilot study was instrumental in identifying the important aspects of LRE for individuals with HFA in Virginia and in the development of this study. The conceptualization of this research study began with an iterative process with an initial pilot study by the researcher (Hayes-Harris, 2012) conducted with a similar population included in this study. The pilot study was a qualitative investigation exploring the experiences of four students who had HFA or AS, who attended public school in Virginia, and their access to appropriate academic placement as outlined in the least restrictive environment provision of the Individuals with Disabilities Education Improvement Act (IDEA). Through three semistructured interviews with three mothers, the researcher asked parents about their children’s school experiences with LRE, and the effect on their children’s future academic placements. One mother had one son in high

school, one mother had two sons in their first year of college, and one mother had a daughter who attended middle school.

Four overall themes emerged from the data; however, the first and primary theme, conformity, permeated all levels of the data and emerged as an overriding “super” theme. The themes were, in order of impact, (a) conformity, (b) staff contributions to eventual outcomes, (c) parental knowledge and awareness, and (d) impacts on academic outcomes. If individuals with HFA could conform to existing general education classroom protocols, with minimum support, they were included, whereas if they required additional supports they were discouraged from participating in general education settings that would be appropriate to their level of intellectual ability. As well, teachers and administrators were cited as being tremendously influential in determining class placements. One participant described many of the elementary school teachers who did not believe her sons could participate in general education classrooms this way, “some people think if you have a disability you can’t be smart too.” A key to participation in LRE for individuals with HFA was the input of administrators. A parent reported one of the assistant principals in her son’s elementary school told her that her son was “MR” (mentally retarded) and “would not get very far.” The principal of that school interceded and placed the student in general education classes; that student eventually graduated high school with honors and at that time was attending his local community college. His mother stated, “number one, the principal’s the driving force in the school, if you don’t have a principal that supports special needs kids, the staff will follow suit.” Knowledge of special education law and how to obtain services for their children was another theme.

Parents who knew what services and supports to ask for—for example, writing composition software and use of a word processor—were much more likely to have children who were afforded those supports in school and access general education environments. However, even the most sophisticated parents understood the limitations imposed by school policies and structures. One mother, explaining why she did not think her son had the same educational opportunities as typical students said,

[laughs] well no [he did not have the same educational opportunities]! I mean, not my John, because I knew, I knew the reality of the situation. So I knew John could not access, I knew he could have done very well in an AP class if he had the right supports, and I knew the supports weren't there, and I knew no matter how hard I fought, they wouldn't be there.

The last theme discussed the effect of academic placements on academic and career goal attainment. For these students early academic success was a predictor of continued academic access. When one student was not able to access the GT program in elementary school, this influenced her placement into a collaborative program for special education students in middle school, which she found easy and sometimes boring. Although the mistake was quickly apparent, the student had already settled in and, in an effort to minimize stress, finished the year in that placement. She was appropriately placed in an honors program the following year. In contrast, a student who was identified early for a math acceleration program, in sixth grade, was automatically qualified for an honors program in middle school. Another student, who was not able to access AP or gifted programs, at that time was attending his local community college hoping to

eventually transition to a university. The fourth student, whose sixth-grade math teacher had described him as brilliant, was unable to access any of the four GT programs his teachers recommended for him due to his inability to conform to rigid entry guidelines, despite his abilities. His mother stated that, “there seems to be a point at which we lost him, and school was never going to challenge or intrigue him again. It was just something he had to live through.” This student was very unmotivated in his placement in collaborative classes, with other special needs students, finding them easy and boring. When asked about his plans after high school his mother stated, “he wants to be a programmer and his grades are not really good enough right now to get into most four-year colleges but he can probably go into a vocational school, that’s what he needs to do and I think it’ll be alright.”

The findings in this pilot study echoed other research. The need to conform to school policies and structures and the inability to do so is reflected in the current literature (Humphrey & Lewis, 2008; Sciotto et al., 2012). As well, a key to academic access was very dependent on teacher support and administration attitudes and beliefs and their subsequent inclusion policies (Horrocks et al., 2008; Jackson Brewin et al., 2008). The autism characteristics of these children often proved to be the measure upon which they were judged and, without the necessary accommodations in testing procedures and academic supports, effectively barred them from inclusion in general education environments that provided stimulating, supportive learning (Assouline et al., 2009; Assouline et al., 2012; Bianco et al., 2009; Foley-Nicpon et al., 2012). The results for these individuals with HFA were anxiety, depression, a lack of motivation, and stress

(Baum, 1994; Bianco et al., 2009; Humphrey & Lewis, 2008; Sciutto et al., 2012). One parent amplified these points when she said, “It feels like they’re excluded from the start. They don’t fit a certain mold.”

The parents in this pilot study were aware of the limitations of the LRE provision when it came to individuals with HFA. One comment on LRE was, “I know LRE is the goal in [my county] and every other county but it doesn’t happen because they have these stupid rules...so a lot of times they don’t have the supports to make LRE work.” In my conclusions to the study, I called for future research to explore how the policies and practices of schools and school staff influence the LRE and academic and career goal attainment of students with HFA.

The pilot study helped to define the direction for the current study, established the potential processes involved in accessing LRE, and identified potential relevant variables at work in accessing LRE for high school students with HFA. The results of the pilot study shaped and directed the study design; the creation of the questionnaire used in this study; and provided the subsequent focus for further exploration of the phenomena of accessing appropriate academic placements, and the effect of these placements on academic and career goal attainment, for high school students with HFA.

Summary

Prevalence data on ASD and HFA tells us that the population of individuals with HFA continues to increase (CDC, 2012, 2014). Addressing the academic needs of these individuals is key to ensuring positive postsecondary outcomes that lead to their continued educational development, employment, and self-sufficiency (Cedurland et al.,

2008; Howlin et al., 2004; Howlin & Moss, 2012). A least restrictive academic environment is critical to this development.

Early research would seem to indicate that the cognitive profiles of individuals with ASD were similar across the spectrum; however, later research has contributed to a cognitive profile specific to individuals with IQs over 70 and that may be considered features of HFA. This profile can be considered an important indicator of the following cognitive features of individuals with HFA: as IQ increases so may verbal ability; there are strengths in processing complex visual stimuli, nonverbal concept formation, and fluid reasoning; and there are weaknesses in working memory, focus, processing speed, and dexterity. There is also evidence to suggest that individuals with HFA may struggle in academic areas such as manual dexterity and grapho-motor skills, written expression, understanding linguistically complex materials, math calculation, and socially mediated verbal and communication skills. The resulting profile describes individuals who may possess high intelligence but who may also need academic support to address deficiencies due to autism. For individuals with this cognitive and academic profile, accessing the academic environments that would constitute LRE may be problematic, as the requirements for entry into such academic settings may be precluded due to the cognitive and academic weaknesses inherent in HFA.

There is some research to indicate that the benefits of inclusion in general education environments for students with ASD are very high and may actually provide developmental opportunities that cannot be obtained in other academic settings. For students with HFA the lack of appropriately advanced curriculum and exposure to a

similarly advanced peer group may lead to a lack of motivation, depression, anxiety, and underachievement. This lack of access to LRE not only impacts academic achievement but postsecondary development as well.

A lack of awareness and training in autism for teachers and administrators may also contribute to a lack of appropriate educational placement in academic settings that would constitute LRE. Research indicates that a lack of awareness of abilities and stereotyped images of all students with ASD as being low functioning may contribute to placements in educational settings that are below the abilities of students with HFA, contributing to a lack of academic development. A resistance by general education teachers to include individuals with HFA in general education settings due to a lack of support for the teacher and student, a lack of awareness of the abilities of individuals with HFA, and an attitude that students in general education settings should not be included unless they meet the standards of a typical student, is also evident. As well, rigid institutional structures that fail to accommodate the needs of individuals with HFA contribute to a lack of inclusion in stimulating educational environments that provide development of crucial skills for postsecondary success.

The IDEA (2004) and the LRE provision were created to ensure that all academic environments are available to all students when appropriate. The language of IDEA (2004) and of the policies of Virginia are clear in their intent that schools provide the needed supports so that students with HFA can access academic environments to develop their “full potential.” Yet it is clear from Virginia’s lack of performance in meeting the

LRE goals set by the Commonwealth itself that Virginia may not be providing the least restrictive academic environment for students with HFA.

It was thus the goal of this study to look at similarities and differences of students with HFA who are able, or not able, to access LRE; determine the current state of academic access for high school students with HFA in Virginia; explore the relationship between LRE and academic and career goal attainment for individuals with HFA; and explore the processes of academic access for individuals with HFA.

CHAPTER THREE

This chapter is organized in six sections: (a) design, (b) participants, (c) data sources, (d) procedures and data collection, (d) validity, and (e) data analysis. Each section has subheadings divided into questionnaire, interview, and document analysis to address the all aspects of the study. The purpose of this study was to explore, through parental report, access to the least restrictive environment (LRE) for high school students with high-functioning autism (HFA), how LRE affects academic and career goal attainment, and how students with HFA are experiencing the LRE provision of IDEA in the Commonwealth of Virginia. The following research questions were addressed to guide this inquiry:

1. What are the relationships between the academic profile of students with HFA and their parent-perceived LRE?
2. Does parental perception of access to LRE relate to students' academic and career goal attainment?
3. What are the factors that facilitate access to LRE, or create barriers to LRE, for students with HFA, as reported by their parents?
4. How has the students' academic placement affected their academic and career goal attainment, as reported by their parents?

Research Design

This study uses an explanatory sequential mixed-methods design (Creswell, 2012); the data produced from each stage are used consecutively to inform the creation of the subsequent stage of inquiry (Greene, 2007). Because there is little research in this area, this design was chosen to take advantage of its capacity to allow for multiple stages and methods of data collection to develop the direction of inquiry, and to integrate the findings in each stage (Greene, 2007; Maxwell, 2005). The ability to examine the phenomena of accessing LRE for high school students with HFA through multiple methods enabled a more comprehensive examination of the phenomena and allowed for deeper understanding (Greene, 2007). A mixed-methods approach allowed for the use of a structured form of inquiry, the questionnaire, to identify relationships and differences between participants while also taking advantage of in-depth interviews to explore the contexts and individual experiences of participants (Maxwell, 2005). Additionally, this approach allowed for triangulation of multiple methods of data collection to provide multiple types of data to enhance the strength of the findings and to explore a variety of participant experiences (Creswell, 2012; Greene, 2007; Maxwell, 2005; Patton, 2002).

Multiple methods of data collection were employed and involved a questionnaire (Appendix A), interviews (Appendix B), and the examination of artifacts and documents, to include medical records and individualized education plans (IEP). Thirty-one questionnaires were used to provide descriptive information on the cognitive and academic profiles of the participants' children and school contexts of academic placements. The purpose of this was to compare the results to the emerging and seminal

research (Bölte et al., 2009; Dawson et al., 2007; Kanai et al., 2012; Mayes & Calhoun, 2008; Rumsey, 1992; Siegel et al., 1996; Yirmiya & Sigman, 1991) in both cognitive and academic profiles (Assouline et al., 2012; Assouline et al., 2009; Foley-Nicpon et al., 2012; Smith Myles & Simpson, 2002; Whitby & Mancil, 2009) of individuals with HFA. This descriptive profile was also an attempt to identify any patterns in cognitive and academic profiles and access to a least restrictive academic environment.

The cognitive and academic profiles were created through parent reports of their children's abilities and challenges when compared to nondisabled peers. Confirmatory evidence of these impressions was sought from medical and school records that included intelligence quotients and cognitive and academic strengths and weaknesses. The school contexts included parental experiences of schools' inclusion practices for students with HFA and the attitudes of teachers and administrators about including students with HFA in general education environments.

To provide an explanation of the processes of access to LRE for high school students with HFA in Virginia, follow-up interviews were conducted with 11 parents (35%) to explore the results of the questionnaires in depth. Parents were asked about how the academic placement decision was discussed at their child's IEP meeting and the roles played by teachers and administrators in the decision-making process. Parent perceptions, experiences, and opinions were explored regarding whether their children were given the same opportunities to access general education settings, including advanced class placements and specialized programming, as typical students; and whether their children were offered and given supports to access general education environments. Parents were

also asked how academic placements affected their children's academic and career goal attainment. Confirmatory evidence of these perceptions and experiences was obtained through school records and medical documentation provided by the parents.

Experiential Knowledge

Personal experience can serve as a source of insight and fuel a deeper understanding of the phenomena being studied (Maxwell, 2005). I had prior experience with high-functioning autism and school environments as a parent of a son with Asperger syndrome and as a high school teacher. The perspective of this experiential knowledge affords me a point of view that gives me a different kind of knowledge about autism, which is not limited to a familial or educational perspective, but encompasses both. This gives me a more nuanced perspective of autism and an understanding that is more holistic in nature. I see the parts and also understand the whole of the experience.

Familial experience. As a family member I have an exceptional vantage point on autism, seeing firsthand how the characteristics of this disorder affect all aspects of daily living, impacting not only interpersonal relationships but school, career, and the ability to live life to its fullest. This led me to an interest in teaching students with special needs. During and after obtaining my master's degree in special education I taught special education for six years: two years at an elementary school in an autism inclusion program and four years at the high school level as a special education English teacher.

Professional experience. As a teacher I was able to work with students with special needs and also observe their educational environment. I noticed a few groups of students in special education who were not appropriately served in self-contained or

collaborative special education settings. They were often highly creative and intelligent but had conditions that were difficult to accommodate in a nonspecialized setting, so they were placed in a special education environment that did not offer the kind of curriculum, or peer interaction, that provided academic growth. The student groups that seemed to fit this profile were students with dyslexia, students who had emotional/behavioral disorders, and students who had HFA. As a special education teacher I knew that one of the intents of the IDEA (2004) was to provide access to appropriate educational programming in the least restrictive environment, addressing the unique needs of the student. However, I observed special education policies were sometimes interpreted in ways that were most convenient for the school division and not in the best interests of the student.

Researcher experience. The experience and learning gained from conducting research is an important contributor to experiential knowledge (Maxwell, 2005). My interest in students with HFA accessing academic environments within which they could experience intellectual and academic growth was the impetus for the pilot study described in Chapter 2. The experience gained in conducting the pilot study helped to define the scope of this study and to develop the questionnaire. Limitations of the pilot study were the low number of participants, a lack of diversity of participants and settings, and a lack of diversity of experience. It was therefore the goal of this current study to provide enough data to describe the phenomenon of accessing the least restrictive environment for students with HFA more completely by launching a Commonwealth-wide questionnaire with the intent to diversify participants, settings, and personal experience.

A larger number of participants provided more interview data and allowed for the exploration of a deeper, richer qualitative data set, and a greater variation of experience.

Reflexivity (Glesne, 2011; Kvale & Brinkmann, 2009) was key in this process and an awareness of my closeness to these phenomena was ever present. Glesne (2011) positions reflexivity as a way to approach qualitative research with a “thoughtfulness... and critical engagement” (p. 159) to inform the process and create an understanding of researcher “characteristics, values, and positions” (p. 159) on the selections of methods, methodologies, and interpretations of data. With this in mind, I was careful to complete a researcher identity memo, write interview memos before and after every interview, provide frequent member checks during interviews and after interview transcriptions, and continually foster a mindfulness and awareness of my verbal responses and physicality during interviews.

Participants

Participants for this study were parents of high school students with HFA and were selected in a purposeful criterion-based manner (Maxwell, 2005; Patton, 2002) to achieve the goal of answering the research questions regarding the experiences of students with HFA accessing the LRE in high school. This section explains how participants were recruited, the exclusion and inclusion criteria for participants, and the composition of both the questionnaire and the interview participants.

Recruitment of Participants

Participants for the follow-up interviews were obtained from a purposeful sampling of those who completed the questionnaire and agreed to be interviewed at a

later date. The target population was contacted through social media, email contact, personal contact, and snowball sampling. As a part of the social media outreach a Facebook page was created to reach out to an expanded population.

Social media: Virginia Autism Research. The tailored design method (Dillman, Smyth, & Christian, 2009) was considered in the creation and implementation of the questionnaire. In this design method several considerations are addressed in establishing trust with the participants, increasing the benefits of participation, and decreasing the cost of participation. Trust was established with the participants by creating a Facebook page, Virginia Autism Research, in an effort to create a community that may legitimize the authority of the study and provide a source of empowerment for the participants. This site was designed to increase the benefits of participation by providing information and context about the questionnaire, asking for participants' help in autism research, supporting group values for parents with children with autism, and providing social validation of the research and their participation in it (Dillman et al., 2009, p. 38). To decrease costs of participating (Dillman et al., 2009), the questionnaire was convenient and used respectful, accessible language.

Dillman et al. (2009) suggest that the questionnaire be designed and implemented with the population in mind. For parents of students with HFA the convenience of accessing a questionnaire online, and at home, may have increased participation. As well, harnessing the participation of parents who frequent online autism advocacy sites is a method used in prior research (Sciutto et al., 2012). Finally, having a website, or in this

case a Facebook page, available for participants to conveniently access may also have increased participation.

The study's Facebook page, Virginia Autism Research, was used as a home base to disseminate research on autism for individuals living in Virginia, and as a point of access for the questionnaire. The privacy settings on the Facebook page allowed search engines to access the timeline on the page in order to exploit this medium for recruitment. The potential to use the discourse between parents on the page was also a latent source of additional data for this study. Additionally, parents who had already completed the questionnaire were encouraged to recruit other parents with children with HFA to access Virginia Autism Research and participate. Parents were informed on the page that access to the questionnaire was confidential because they did not have to join the page to link to the questionnaire; they were also informed that contributing to the page, in the form of discussion and commentary, was not confidential and would mean they would no longer have anonymity.

Personal contact and snowball sampling. Initial personal contacts were made through email communication (see Appendix C) with Virginia autism advocacy groups and groups for parents who have children with HFA. Additionally, groups that serve parents of individuals on the autism spectrum were reached (see Appendix D) through Facebook and also contacted via email. Linking to groups through email and Facebook was done in an effort to construct partnerships with these groups for the purpose of their membership in participating in and contributing to autism research in Virginia.

Meeting at a disability resource center. A face-to-face meeting was scheduled at a disability resource center in Central Virginia to explain the research study. Flyers (see Appendix E) were handed out, and left onsite, to recruit participants for the study, and staff were encouraged to distribute the information about the survey link and Facebook page to parents with children with HFA. This was done to expand the sample to include individuals who may not frequently access the Internet, attend advocacy and support group meetings, or who would not otherwise be directly affected by the other recruitment efforts. The flyers contained a link to the survey and information for the Facebook page, and were designed to create interest in participating in autism research by parents. This meeting resulted in several referrals to the researcher for other autism groups within the Commonwealth of Virginia, such as Commonwealth Autism Service and the Autism Society of Central Virginia. These contacts produced a vigorous snowball sampling effect.

Patton (2002) describes snowball sampling as a method for “locating information-rich key informants or critical cases” (p. 237). Individuals and organizations introduced to me during the process of recruitment initiated personal contacts to potential participants. For example, individuals at the Commonwealth Autism Service introduced me to individuals at the Virginia Commonwealth University – Autism Center for Excellence, who posted the Facebook page and survey link to their main page and included it in their newsletter.

Participants who agreed to be interviewed also referred acquaintances they knew who met the inclusion criteria for the questionnaire. Other personal contacts included handing out flyers at conference presentations in January and April of 2014.

Inclusion and Exclusion Criteria

In order to be included in this study participants had to meet the following criteria: parents or guardians of high school students with high-functioning autism who currently attended a public high school, or who had graduated in the past two years in the Commonwealth of Virginia, and who had an IEP the last three years in high school. In order to be considered high functioning the high school students were required to meet the level of intelligence defined by this study: a verbal or full-scale IQ of 70 or above. Parents or guardians were excluded from the sample if their child did not attend a public high school in Virginia, had graduated more than two years ago, did not meet the definition of high-functioning autism, or did not have an IEP for the last three years of high school.

Having an IEP in the last three years of high school was meant to allow for time to experience inclusion and LRE. All participants' children had an IEP for many years and had experienced LRE policies throughout their school career. Also, students who participated in a post-high school program, under the auspices of an IEP, were also included. One participant attended a job-training program after high school until age 21. Inclusion was monitored through the first three questions of the questionnaire; if the participant did not meet the inclusion criteria, the Survey Monkey program, an online

survey program, would end the questionnaire and thank the users for their willingness to participate.

Questionnaire Participants

Purposeful, criterion-based sampling (Creswell, 2012; Maxwell, 2005; Patton, 2002) designed to capture a specific population was conducted to address the research questions. The sampling frame was limited to parents of high school students with HFA who lived in the Commonwealth of Virginia. The population sample was parents of children with HFA, as defined by a verbal or full-scale IQ of 70 or above, who attended a public high school, or who had graduated from a public high school in the last two years, in the Commonwealth of Virginia. The IQ information that determined HFA status for the study was collected from the demographic section of the questionnaire.

Prior to the study I investigated documentation published by the Commonwealth of Virginia to determine if students with HFA were enumerated. Although students identified with autism on their IEP were counted in Virginia, there was no way to determine how many of these students had HFA. In order to arrive at a rough estimation of the number of public high school students and recent graduates with HFA in Virginia, two data sources were accessed. Using the most recent school year data by the Commonwealth of Virginia, and applying HFA prevalence percentages from the United States Centers for Disease Control (CDC, 2012), the number of public high school students and recent graduates was estimated for the purposes of targeting the number of parent participants to complete the questionnaires.

According to the special education child count for the school year 2012-2013 (Virginia Department of Education, 2013), there were 4,567 students with autism in Grades 8 through 12 attending public schools in Virginia. The most recent special education child count was for the 2012-2013 school year, a year prior to the study, so the number of rising eighth graders was counted for the purposes of determining a sample size of high school students for the 2013-2014 school year. The population sample also includes parents of students who graduated public high school in the school year 2011-2012. The number of public high school students with autism graduating high school in the school year 2011-2012 was 936 (Virginia Department of Education, 2013). Thus the total number of current public high school students with autism and high school graduates over the prior two years, with autism, was 5,503. The Commonwealth of Virginia does not disaggregate data for students with HFA, so in order to estimate the number of students with HFA another data source was sought. Prevalence data from the Centers for Disease Control (2012) consulted at the beginning of the study suggested that approximately 62% of individuals with autism are in the high-functioning range. Therefore, it was estimated that approximately 3,412 public high school students with autism in Virginia might have HFA. A target of 1% of the population of parents who had children who were public high school students and recent graduates with HFA was identified for the questionnaire. Thus a target of 34 parent participants was sought for the questionnaire.

There were 111 individuals who accessed the questionnaire. Forty-nine questionnaires were incomplete: 26 completed the informed consent page only, 21

completed the three screening questions only, and 2 dropped out during the survey. There were 62 questionnaires completed. The survey program disqualified 26 individuals because they did not meet the requirements of one or more of the screening questions for the inclusion criteria: 14 did not attend a public high school in Virginia, 16 did not have an IEP, and 13 did not report a verbal or full-scale IQ of 70 or above. There were 36 individuals remaining with a complete questionnaire. Of that 36, 5 participants were disqualified by the researcher because they did not answer the screening questions accurately: 3 due to student age (8, 23, and 24 years old), 1 because the student did not have an IEP, and 1 because the student was in middle school. After cleaning the data 31 participants were included in the study. Twenty-four mothers, three fathers, and four anonymous parents or guardians completed the questionnaire about their children.

Demographic data was collected regarding participants' children (Table 2). Ages ranged from 14 to 22 with an average age of approximately 17 years. There were 25 participant children who were White, 2 who were Black/African American, 2 who were Hispanic/Latino, 1 who was biracial (not specified), and 1 who was biracial Black/African American and White. Fifteen participants reported IQ data that I was able to verify with documentation such as IEPs and medical records; the average IQ of these participants was 97. There were 25 males and 6 females. Throughout this study participants are identified by their questionnaire number. Specific identifying information, such as school division, is not included in the reporting to protect identities and ensure confidentiality.

Table 2

Demographic Data of Participant Children

Participant #	Age	Gender	Race	Autism diagnosis	Academic placement
4	14	F	White	PDD-NOS	GenEd
13	18	F	White	Autism	SpEd
22	19	M	White	Asperger syndrome	GenEd
23	20	M	White	ASD	SpEd
27	17	M	White	PDD-NOS	GenEd
28	16	M	White	ASD	GenEd
37	15	M	White	PDD-NOS	GenEd
40	14	M	White	ASD	GenEd
41	17	M	White	Autism	SpEd
44	14	F	Black	ASD	GenEd
45	18	M	White	ASD	SpEd
46	18	M	White	Asperger syndrome	GenEd
51	14	M	Hispanic/Latino	ASD	GenEd
52	15	M	White	Autism	SpEd
55	16	M	Biracial Black/White	Asperger syndrome	SpEd
57	17	M	White	Autism	GenEd
79	20	M	White	Autism	GenEd
80	20	M	White	Asperger syndrome	GenEd
81	15	F	Hispanic/Latina	Asperger syndrome	GenEd
91	16	M	Biracial	Asperger syndrome	SpEd
92	22	M	White	Autism	SpEd
93	21	M	White	Autism	SpEd
95	19	M	White	ASD	SpEd
98	16	M	White	Asperger syndrome	GenEd
100	16	M	White	Asperger syndrome	GenEd
101	18	F	White	PDD-NOS	GenEd
102	16	M	White	PDD-NOS	GenEd
103	19	M	White	ASD	GenEd
104	20	F	White	NVLD	GenEd
109	17	M	Black	Asperger syndrome	GenEd
111	18	M	White	PDD-NOS	GenEd

Note. GenEd = general education placement 80% or more of the day; SpEd = special education placement more than 60% of the day; PDD-NOS = pervasive developmental disorder–not otherwise specified; ASD = autism spectrum disorder; NVLD = nonverbal learning disability.

In addition to the student demographic data in Table 2, additional demographic information was collected about participants' children to include school division. Fourteen school divisions across the Commonwealth of Virginia were represented. Each school division is given a code dividing it by location and size. The codes for location are urban (U), suburban (S), and rural (R). The number of students in the school division determined the size of the school division and is indicated by small (S), medium (M), and large (L).

Interview Participants

The follow-up interviews were a result of purposeful and convenience sampling (Creswell, 2012; Maxwell, 2005; Patton, 2002). All participants who met the inclusion criteria described above and who agreed to follow-up interviews were either interviewed in person or over the phone. Ten participants were interviewed in person and 1 participant was interviewed over the phone. Interview participants' children ranged in age from 14 to 22. There were four females and seven males, five of whom were in general education settings and six of whom were in self-contained settings. Interview participants are described in Table 3. All interviews were subjected to a thematic analysis (Braun & Clarke, 2006).

Table 3

Demographic Data of Interviewees' Participant Children

Participant #	Age	Gender	Race	Autism diagnosis	Academic placement
4	14	F	White	PDD-NOS	GenEd
13	18	F	White	Autism	SpEd
23	20	M	White	ASD	SpEd
27	17	M	White	PDD-NOS	GenEd
44	14	F	Black	ASD	GenEd
45	18	M	White	ASD	SpEd
51	14	M	Hispanic/Latino	ASD	GenEd
52	15	M	White	Autism	SpEd
55	16	M	Biracial Black/White	Asperger syndrome	SpEd
81	15	F	Hispanic/Latina	Asperger syndrome	GenEd
92	22	M	White	Autism	SpEd

Note. GenEd = general education placement 80% or more of the day; SpEd = special education placement more than 60% of the day; PDD-NOS = pervasive developmental disorder–not otherwise specified; ASD = autism spectrum disorder; NVLD = nonverbal learning disability.

Student profile participants. These interviews were also used to provide data for the supplementary analysis of student profiles. Maximal variation sampling (Creswell, 2012; Maxwell, 2005; Patton, 2002) was used to select three student profiles representing three levels of access to LRE: (1) a student whose parent reported her daughter was included in academic environments with her nondisabled peers to the *maximum extent appropriate* “substantially more” than was appropriate, (2) a student whose parent

reported her son was included in in academic environments with his nondisabled peers to the *maximum extent appropriate* “appropriately,” and (3) a student whose parent reported her son was included in in academic environments with his nondisabled peers to the *maximum extent appropriate* “substantially less” than was appropriate. This sampling technique is intended to explore the full range of participant experience instead of reporting a generalized, typical view of a phenomenon (Maxwell, 2005). In this study, maximal variation sampling was used not only for selection criteria for in-depth analysis of interviews, and as an analytic device to illustrate the full diversity of participant experience, but also as a validity check in demonstrating any shared experience across heterogeneity (Patton, 2002). For example, it enabled interviewing parents who believed their child was *able* to access an LRE and comparing and contrasting their experiences with those of parents who believed their child was *not able* to access an LRE. The participants for the three student profiles are described next.

Student profile 1, participant 13. The student in profile 1 is an 18-year-old female who is served in a self-contained environment. Her academic skills are at grade level in reading-decoding and verbal abilities, her reading comprehension is below average and her math skills are at the 4.5 grade level. She was initially placed in her neighborhood school in a general education setting but her parents felt that a self-contained setting was more appropriate for her. Her parents feel her LRE is in a self-contained setting and that inclusion in a general education environment is inappropriate.

Student profile 2, participant 27. The student in profile 2 is a 17-year-old male who has always been served in a general education environment. His academic skills are

above average and his academic program includes honors and AP classes. His parents feel that his academic setting is appropriate and he is in an LRE. This student was included in this comparison to act as a control for the other two profiles.

Student profile 3 participant 55. The student in profile 3 is a 16-year-old male who is currently served in a self-contained setting. His academic skills are above average and his IEP indicates that he is an A/B student. His mother reports that he has passed several end-of-course assessments with a perfect score. His parents feel that his academic setting is inappropriate to his abilities and considers his LRE “substantially less” than is appropriate.

Data Sources

There were two forms of instrumentation: a questionnaire and an interview protocol. In order to triangulate data, and provide confirmatory evidence of parents’ perceptions and experiences, a document analysis of IEPs and other school artifacts was also conducted during and after the interviews. Validity was considered at all stages of the study.

The research design was created to provide for maximal internal and external validity. This study was designed so that data obtained through the questionnaire and interviews could be triangulated with other documentation providing confirmatory evidence of parental report.

Questionnaire

After the initial pilot successfully determined adequate question construction and procedures for use of the questionnaire, the process to formally launch the questionnaire

used in the study was initiated. In accordance with the ethical treatment of human research subjects, the first page of the questionnaire was an informed consent page that described the study and provided contact information for me, a faculty advisor, and the Office of Research Integrity and Assurance. Participants were required to read and accept the informed consent before continuing with the questionnaire. The first three questions served as the screening tool to qualify the participants for the study. If the participants did not meet the inclusion criteria they were thanked for their participation and the questionnaire ended.

There were both closed- and open-ended questions on the questionnaire. The closed-ended questions were designed to elicit demographic information and gauge perceptions. The open-ended questions were made available to provide opportunities for responses that were atypical, such as *other* responses, and for additional information the participant wanted to provide outside of the parameters of the closed-ended questions.

The questionnaire defined educational contexts of the participants' children for the study and for the purpose of establishing an academic and cognitive profile of students with HFA, as compared to their nondisabled peers. The first subsection of the questionnaire was a demographic profile of the students. There were four additional subsections measuring educational contexts: parent experiences with LRE, parent assessment of goal attainment, student attitudes toward school, and student relationships to their peer group.

The context areas and the number of questions defining these areas were: student demographic and academic profile (21 questions), current educational placement and

services for students (4 questions), parent experiences with LRE (20 questions), parent assessment of whether students can meet academic and career goals based on current educational placements (4 questions), school culture and awareness of twice exceptionality by general education and special education teachers (3 questions), barriers and supports to LRE (2 questions), student attitude toward school (1 question), and student interaction with peer group (2 questions).

The variables used to establish the student profiles were: age, race, gender, IQ, autism spectrum diagnosis, primary IEP disability qualification, and a parental assessment of skills when compared to nondisabled peers. The variables and their definitions that made up the academic profile were: verbal; reading/decoding – sounding out words; reading comprehension – understanding what he/she reads; writing/composition skills; math skills; social skills; executive functioning – ability to organize, judge time, plan; working memory – problem solving while remembering; processing speed – process information automatically and quickly; functional skills – take care of personal needs, manage household chores, anticipate required needs; emotional maturity – ability to control emotions under stress; eye/hand coordination – ability to guide hand movement guided by vision (e.g. handwriting). These variables were established to determine if there were any relationships between these variables and the academic placements of the students. As well, the construct of these questions was in the form of Likert scale items comparing the abilities of the students with HFA to their nondisabled peers. These data were obtained through parent report.

The questionnaire determined the educational context of the student through the following variables: school division, special education services, accommodations, and the percentage of the day that the student was in the regular education classroom. There were a series of questions about least restrictive environment, for example, whether students were ever recommended for special or enriched programs by teachers and administrators; whether students were able to access advanced or special programs by parent request; if students were offered, or received, supplemental aids or services; and if their IEP accommodations were followed.

Validation of the questionnaire. In order to ensure a valid instrument the questionnaire items were created after an initial qualitative pilot study was completed with parents of children with HFA. Three external reviewers were solicited to review the questionnaire in an external audit (Glesne, 2011) prior to a pilot of the questionnaire. The reviewers found the questions appropriate for the purpose of the study (Creswell, 2012). To gauge construct and content validity of the questionnaire it was pilot tested with 24 participants who had experience with individuals with HFA; feedback was solicited from the participants. This pilot study helped to determine the variables needed to measure the phenomena of access to LRE for high school students with HFA.

There were two phases of the pilot, which involved parents and family members of individuals with HFA and special education teachers. The first phase used paper questionnaires to determine effective question construction and the second phase tested use of the Survey Monkey website for efficiency and ease of transfer of data to SPSS.

In phase one, a paper form of the questionnaire was handed out to 10 individuals on September 2, 2013. Empirical research and current policy documents were used to formulate the questions regarding LRE on this initial questionnaire. Three experts in the fields of autism, public policy, and survey research reviewed the questions to determine their appropriateness for the purposes of the study and to gauge the ease of implementation of the questionnaire. Participants were asked to complete the survey and give feedback regarding the question content and organization. Based on the feedback several questions were simplified, or expanded, and some were eliminated.

In phase two, participant feedback in phase one was used to inform the creation and implementation of the pilot questionnaire launched on September 11, 2013, on the Survey Monkey website. Fourteen participants were asked to access the survey online and provide feedback on length of time to complete the survey, the clarity of the questions, and any suggestions to make the question content and questionnaire more user-friendly. Additionally, phase two ensured the processes and procedures established for completing the questionnaire online were appropriate and provided adequate participant confidentiality. Following the feedback from both stages of piloting the questionnaire and a thorough external review by experts in the field, the questionnaire was found to be a valid measure for determining the LRE experiences of parents with children with HFA. The data from both phases were aggregated and analyzed prior to the launch of the study.

Interviews

At the end of the questionnaire there was a question that asked for the names and contact information for participants who may be interested in granting interviews. An

interview guide (Kvale & Brinkmann, 2009) was devised to manage the interviews (Appendix B). This was done to remind me about procedures, such as reiterating to the interviewees that they could discontinue the interview at any time, and also to ensure that each interview was conducted in a similar manner and contained similar content.

Kvale and Brinkman (2009) suggest interview questions should “contribute thematically to knowledge production and dynamically to promote a good interview interaction” (p. 131); this was taken into consideration when the interview questions were created. The interview questions were open ended and designed to expand on the questions from the questionnaire and the experiences of the participants. The goal was to allow the participants to explain the decision-making processes involved with their children’s academic placement in the LRE; how their children’s cognitive and academic strengths and weaknesses may have affected their children’s access to LRE; how the participants felt the teachers and administrators’ attitudes, knowledge, and experiences of ASD and HFA affected the placement decision; how the determination of the support to be provided was made and the effect of their children’s disability-related needs to the LRE decision; how the academic placement of their children would affect their children’s academic and career goal attainment; and how their children’s academic placement affects their children’s relationship with their peers and with their feelings about school. The interview was designed to accommodate a dynamic process and elicit information in a secure and relaxed environment. Follow-up and probing questions were available to further explore the answers.

Validation of the interview protocol. In order to ensure validity of the interview three experts in the field of education reviewed the interview questions and protocol to determine the appropriateness of the protocol and the questions for the purposes of the study. An interview guide (Kvale & Brinkmann, 2009) managed the procedural consistency of the interviews (Appendix B).

Document Analysis

The document analysis was designed to provide confirmatory evidence of the information provided on the questionnaire and in the interview. As well, the document analysis sometimes provided input from teachers, administrators, and service personnel who worked with the student. This information was not only used to provide confirmatory evidence of the information provided by the parent but was also useful in providing a voice for the educational personnel who worked with the student. This was done by examining the student's IEP and any other artifacts the parent might have about the IEP deliberations, such as emails from school personnel, notes taken during the IEP meeting, and follow-up paperwork sent by the school. As well, if the parent was willing to share any medical documentation to corroborate the cognitive and academic profile provided by the parent, that was also reviewed. A checklist (Appendix D) was used in the document analysis to prompt the researcher to ask about the documents, ensure that the same items were examined for each participant, and ensure that artifacts were itemized and notes were taken explaining their significance to data gathering.

The sections of the IEPs examined included the present levels of academic performance, student strengths and weaknesses, test scores to include IQ and academic

tests such as subject competency tests (standards of learning (SOL)), teacher comments and concerns, parent comments and concerns, services, LRE, accommodations/modifications, goals, and the transition statement. The present levels of academic performance provided student strengths and weaknesses and test scores and assessments that were used to confirm the information provided by the parent participants. Teacher comments and concerns memorialized within the IEP were used to confirm parent observations but also used to provide evidence from school personnel that may not have been provided by the parent. Parent comments and concerns noted within the IEP were considered to not only corroborate what the parent may have reported but to also provide some insight into the views of school personnel toward the parent and the student. An examination of the services and LRE page was used to corroborate the parent's report of the child's academic setting; it was also used to further examine the percentage of time the student was in general and special education placements. Accommodations and modifications were also used as confirmatory evidence to support parental report. The goals and transition statements were very important in establishing what the plan for future academic and career goals were for the student, as reported by the school, and comparing that with the educational placement to gauge whether the two were in sync. When there appeared to be a conflict between goals and how the school was providing the academic environment to meet those goals, this was discussed with the parent.

Medical evidence was generally used to confirm parental report and any recommendations for accommodations, services, and curriculum modifications were noted. These were compared to the educational supports offered by the school and any

differences were discussed with the parent. These records were also important in confirming parental report of functional skills and intellectual ability

Procedures and Data Collection

Following are the procedures used in conducting the study, which include creating and launching the questionnaire, devising the interview and the interview procedures, and the document analysis. I also describe the steps taken during the study and the data collection.

Questionnaire

As required for the ethical treatment of human research subjects, an application to conduct research was sent to the Office of Research Integrity and Assurance at George Mason University on October 13, 2013. After review of the research instruments and implementation protocol the Office of Research Integrity and Assurance found the research exempt from further review on October 31, 2013 (Appendix F).

The study's Facebook page was officially launched with the link to the questionnaire on October 31, 2013, after receipt of the exemption letter. The Survey Monkey link was made available to participants who chose to join the page. Survey Monkey was chosen due to its ease of use, to allow access to the data at any time, to ensure full control by the researcher, and because of its potential familiarity to the participants. If the participants wanted to maintain anonymity they were not required to join the Facebook page. The privacy settings on the Facebook page were set to allow for open access to the information provided on the Facebook page and the questionnaire, even if the participant did not join the page. After accessing the questionnaire, the

participants were informed of the confidentiality procedures and consent was obtained following the established protocol of George Mason University prior to the beginning of the questionnaire (Appendix G). At the end of the questionnaire, participants who wished to be available for an interview provided their first name and a method that could be used to reach them.

On November 1, 2013, an initial email contact (Appendix C) was sent to organizations, Facebook administrators, and parent groups with the link to the questionnaire. By mid-November there were three completed questionnaires. On November 18, 2013, an amendment was submitted to the Office of Research Integrity and Assurance to add an incentive to the study, a raffle for two \$75 gift cards, for participants who completed a questionnaire. On December 11, 2013, the changes were accepted by the Office of Research Integrity and Assurance and the study was found exempt from further review.

After receiving a contact email, the disability resource center in Central Virginia requested a meeting on December 6, 2013. This meeting created referrals to organizations and individuals for the purpose of sending out the questionnaire to listservs, Facebook pages, and websites. On December 10, 2013, several emails were received from organizations willing to participate in the study. The questionnaire was active from October 31, 2013, until May 29, 2014; the last complete response was on May 8, 2014. There were 111 responses received.

The questionnaires were numbered in order to organize and identify the questionnaires when linked to interview and document data. In order to protect

confidentiality, participants were identified by their questionnaire number. According to the survey data provided by Survey Monkey the time it took participants to complete the questionnaire ranged from approximately 9 minutes to approximately 3 hours with a mean of approximately 33 minutes.

Interview Procedures

Semistructured interviews (Appendix B) were conducted at the convenience of the participant and were designed to examine the processes, inputs, and academic and career impacts of the academic placement decisions. Participants provided their name and preferred method of contact on the questionnaire. Ten interviews were conducted in person and one interview was conducted over the phone, depending on each participant's preference. Participants were advised of the risks, benefits, confidentiality procedures, and their rights as participants in this study. Participants who were interviewed in person provided written consent (Appendix H) before the interview began; the participant who was interviewed over the phone provided signed consent forms via an email attachment prior to the interview. All participants granted permission, in the signed consent, for an audio recording of the interview for later transcription, and also for me to complete the checklist of data provided on IEPs, medical records, and other documents volunteered by parents. Participants who were interviewed in person or over the phone were advised that they could discontinue the interviews at any time. Participants who provided follow-up information via email were also advised, through email, that they could stop email correspondence at any time.

All interviews were taped using a Sony© IC Recorder (ICD-PX312) and the tapes were transcribed verbatim into a Microsoft® Word document with all identifying information removed. The mean duration of the interviews was 61 minutes; the shortest interview was 33 minutes and the longest interview was 108 minutes (see Table 4). The resulting transcribed interviews were matched by the number on the corresponding questionnaire, so that the two could remain linked for triangulation purposes. Prior to each interview participants were asked if they could be contacted after the first interview to answer further questions for any necessary clarification and to provide member checks of the transcribed interview. Participants were also asked if they could provide copies of IEPs, medical records, or other artifacts for examination.

Ten of the 11 interviews were done in person so the participants were asked to bring their children's relevant IEPs, medical information for confirmatory evidence, and any artifacts from themselves or the school relating to LRE, academic placement, or academic supports. The interview locations were selected for each participant's convenience and consideration was made for Internet access so the participant could access online materials if necessary. Table 4 summarizes the participant number, the length of the interview, and the confirmatory documentation brought to the interview.

Table 4

Interview Schedule and Documentation Provided

Participant #	Length of interview (minutes)	Documentation reviewed during interview
4	51	Current IEP, prior two years' IEPs
13	76	Current IEP, prior two years' IEPs
23	62	Last IEP, prior four years' IEPs, artifacts written by student
27	47	Current IEP
44	59	Current IEP
45	69	Current IEP, medical records, school records, psychological evaluation, speech and language evaluation, educational evaluation, sociological assessment
51	63	Current IEP
52	48	No documentation (phone interview)
55	34	Current IEP
81	33	Current IEP
92	108	Current IEP, prior year IEP, IEP progress reports, transition IEP to postsecondary employment setting for last two years

Note. IEP = Individualized Education Plan.

The documents were examined before the researcher left the interview and notes were made on the document checklist. One interview was conducted over the phone and there was no documentation provided for that interview.

During the interviews member checks were frequently employed to ensure that the participants' experiences were accurately represented in notes and so that I understood the meaning of their statements. After the interview key points were summarized with the participant to provide a final check of the intentions of their statements. Participants were thanked for their time and their willingness to participate in this research. After the transcription and coding of the interviews the participants were emailed the transcript of their interview for a final member check.

Document Collection Procedures

Questionnaires, interview protocols, and student records were collected. Student records included IEPs, medical records, and student work artifacts. I examined the documents in person, at each interview site, and a checklist was completed for each interview and for each set of documents. The questionnaires were numbered in order to organize and identify the questionnaires when linked to interviews and student records. In order to protect confidentiality, participants were identified by their questionnaire number. Follow-up questions were asked about the documents in person or through email. No documents were printed or kept by the researcher.

Researcher Memos

Prior to each interview I created a folder with the interview protocol, checklist, consent form, and questionnaire the participant had completed. Part of this process involved reviewing the questionnaire and writing a researcher memo. The purpose of the memo was to review the data from the participant but also to reflect on my perspective of the participant and preconceptions I might have about the participant and my potential

response to the information he or she may provide. This was done to create an internal dialogue about potential biases and preconceptions I might have prior to the interview.

After each interview a brief memo was written summarizing key impressions and my response to points raised by the participant. The memos before and after the interviews were designed to create mindfulness about the process and my participation in the data collection and to document additional data volunteered by the participant.

Validity

Credibility and trustworthiness of the study were increased through the selection of the participants through purposeful sampling; procedural reliability, or consistency of procedures across participants; a thorough examination and explanation of the contexts of the phenomena experienced by the participants through rich data; the thoroughness of the examination of interview data; and the triangulation of methods and data sources.

Multiple methods of triangulation were used (Creswell, 2012; Greene, 2007; Maxwell, 2005; Patton, 2002). Data source triangulation was completed through the use of a questionnaire, interview transcripts, and artifacts. Additionally, the mixed-methods study design was chosen to provide for a variety of quantitative and qualitative data for analysis. Credibility of the questionnaire, interview data, and document analysis are discussed separately.

Questionnaire

Participant recruitment for completing the questionnaire was a critical component of this study. In order to explore the full range of participant experience (Patton, 2002) geographic location was considered and a variety of recruitment methods were employed

to ensure participants from a variety of school divisions in Virginia were solicited to participate in the study. There are differences in school funding and teacher pay within the Commonwealth (Baker, Sciarra, & Farrie, 2010, 2012; Salmon, 2010) that may contribute to differences in access to supports, services, and personnel utilized in accessing LRE. Numerous parent groups and local chapters of national advocacy groups located throughout Virginia were contacted to ensure that the participant group was representative of the heterogeneity within the autism community.

Interview Data

The appropriate quality indicators suggested by Brantlinger, Jimenez, Klingner, Pugach, and Richardson (2005) for the interview protocol included selecting appropriate participants, clear interview questions, adequate procedures for recording and transcribing interviews, participants represented sensitively, and appropriate measures taken to ensure confidentiality.

Reflexivity (Glesne, 2011; Kvale & Brinkmann, 2009) was a habit cultivated early in the data-gathering and interview process. Critical engagement of my own personal and professional experience was considered at all stages of data collection (Glesne, 2011). To increase the thoughtfulness of my role within the process I completed a researcher identity memo, formulated interview memos before and after each interview, and actively monitored my verbal responses during the interviews.

Member checks were conducted throughout the interview process (Maxwell, 2005). Member checks were conducted during the interviews and after the initial transcription of the interviews. The two stages of member checks ensured that the

participants were in agreement with their statements and with the categorization of their statements during the later transcription and coding process.

The use of maximal variation sampling is an analytic device I used to not only to demonstrate shared experience across heterogeneity (Patton, 2002) but to also examine evidence that appeared discrepant from the experience of most participants (Maxwell, 2005). This was to ensure that all participant experiences were examined for similarities and differences before conclusions were drawn.

Document Analysis

To ensure validity of the questionnaire and interview data confirmatory evidence was obtained from IEPs, medical records, and other artifacts. This triangulation of data compared all three data sources for consistency of evidence.

The IEPs, medical records, and other artifacts were examined for obvious alterations; when none were found, the authenticity of the documents was considered verified. A checklist (Appendix F) was used to describe the contents found within the documents and to provide for a consistent use of procedures.

Data Analyses

This study utilized both quantitative and qualitative methods of analysis. SPSS Statistics version 21 (IBM Corporation, 2012) was used for the quantitative data analysis. Qualitative analysis was accomplished through thematic analysis (Braun & Clarke, 2006; Glesne, 2011) of open-ended questionnaire and interview data. As well, a comparison of questionnaire and interview data from participants was conducted to determine which participants were selected for a maximal variation sampling (Creswell, 2012; Maxwell,

2005; Patton, 2002). This resulted in the creation of three divergent student profiles that were compared using thematic analysis (Patton, 2002) and cross-case analysis techniques (Stake, 2006). Analyzing the qualitative data from the questionnaires, the interviews, and the student profiles provided for a progressively deeper analysis of the data.

Data Organization

After the initial screening which qualified the 31 questionnaires for inclusion in the study, the questionnaire data was entered into SPSS 21 (IBM Corporation, 2012) and was cleaned and organized for further analysis. The data from five open-ended questions were transferred to a document, which organized the data into a table for analysis.

The interviews were taped for verbatim transcription and document analysis checklists were completed during and after document examination at the time of the interview. Following the transcription of the interviews the data was compiled into a three-column table for thematic analysis. Interview and questionnaire data were further examined using thematic analysis and cross-case analysis techniques for three divergent student profiles.

Quantitative Analysis of Rating Scale Questions

Selected variables were compared to determine any existing relationships. Because the variables being compared were ordinal and I was interested in the relationship between individual items a nonparametric Spearman r_s was selected to perform the analysis. Comparisons of student demographics, academic profile, school divisions, current academic placement, inclusion in general education environments, and meeting future academic and career goals were conducted using descriptive statistics and

the nonparametric Spearman r_s test to determine if there were any relationships between the variables.

Quantitative analysis for research question one. Research question one examines the relationships between the academic profile (Q14-Q25) of students with HFA and their parent-perceived LRE (Q35, Q46). The quantitative analysis of the rating scale questions for research question one was done in three steps. First, descriptive statistics were examined to assess the range of responses, the mean, and the standard deviation for the academic profile variables (Q14 – verbal, Q15 – reading/decoding, Q16 – reading comprehension, Q17 – writing/composition skills, Q18 – math skills, Q19 – social skills, Q20 – executive functioning, Q21 – working memory, Q22 – processing speed, Q23 – functional skills, Q24 – emotional maturity, Q25 – eye/hand coordination) of all participants ($N = 31$). Second, descriptive statistics were examined to assess the range of responses, the mean, and the standard deviation for the variables related to parent-perceived LRE (Q35 – same opportunity to access LRE as nondisabled peers, Q46 – included in academic programs as nondisabled peers “to the maximum extent appropriate”) of all participants ($N = 31$). Third, a Spearman r_s correlation coefficient was calculated to investigate the relationship between parental perception of whether their child had the same opportunity to access LRE as nondisabled peers (Q35) and their perceptions of their child’s academic skills, as compared to their nondisabled peers, in verbal skills (Q14); reading decoding – sounding out words (Q15); reading comprehension – understanding what he/she reads (Q16); writing/composition skills (Q17); math skills (Q18); social skills (Q19); executive functioning – ability to organize,

judge time, plan (Q20); working memory – problem solving while remembering (Q21); processing speed – process information automatically and quickly (Q22); functional skills – take care of personal needs, manage household chores, anticipate required needs (Q23); emotional maturity – ability to control emotions under stress (Q24); eye/hand coordination – ability to guide hand movement guided by vision, e.g. handwriting (Q 25).

In addition, in order to compare student groups based on academic setting (Q29) I separated the sample into two groups: the first group ($n = 10$) is identified as self-contained and “spends most of the day (more than 60%) in special education classes with no typical, nondisabled peers”; the second group ($n = 21$) is identified as general education and “spends most of the day (80% or more) in at least collaborative general education classes with typical, nondisabled peers.” Descriptive statistics were calculated for the relationships between the academic profile (Q14-Q25) of students with HFA and their parent-perceived LRE (Q35, Q46).

Quantitative analysis for research question two. Research question two examines parental perception of access to LRE (Q35, Q46) and how they relate to parent’s perception of student’s academic (Q47) and career goal attainment (Q49). First, descriptive statistics were calculated to assess the range of responses, the mean, and the standard deviation for the parent-perceived LRE (Q35 – same opportunity to access LRE as nondisabled peers; Q46 – included in academic programs as nondisabled peers “to the maximum extent appropriate”) as well as the parent-perceived academic (Q47) and career goal attainment (Q49) of all participants ($N = 31$). In order to determine the relationship between parent-perceived LRE and academic and career goal attainment a nonparametric

Spearman r_s correlation coefficient was calculated. In addition, these variables were also compared by student academic setting (Q29): students served in a self-contained setting ($n = 10$) and students served in a general education setting ($n = 21$).

Qualitative Analysis

There were two sources of qualitative data: the open-ended questions from the questionnaire and the interviews. The data from the questionnaire were organized in a summary and analyzed thematically. The data from the interviews were subjected to a thematic analysis and coded, sorted, analyzed, and categorized. Overarching themes from both open-ended questions on the questionnaire and follow-up interviews were identified to answer research questions three and four. In addition, the questionnaire, interview, and data analysis data were triangulated and analyzed together for the comparison of the three student profiles.

Open-ended questions from the questionnaire. First, five open-ended questions on the questionnaire were analyzed for the study. These data were compiled before the interview process and continued throughout the study as new participants entered the study. Questions 48 and 50 were used to expand on two Likert scale questions (Q47, Q49) about whether the participant's child's academic placement will help their child attain their academic and career goals. These data were used to further explain and amplify parental views of their children's academic placement expressed through the Likert scale. The questionnaire data were organized into a table that was used to sort the data by participant and academic setting. These qualitative questions were corroborated with the questionnaire results of the quantitative questions regarding parent's perception

of student's academic (Q47) and career goal attainment (Q49). The data in the table were analyzed using thematic analysis techniques and the results were organized into themes for later comparison to the results of the thematic analysis of the interview data and to synthesize into overarching themes.

Questions 54 and 55 provided data on participant experiences about barriers to LRE and supports to attain LRE. A table was created to sort the data by participant and academic placement. The data were analyzed using thematic analysis techniques and organized into categories for further analysis. The remaining question, Question 59, asked for additional comments regarding their experience with LRE and represented a purely participant-driven response. This question provided data for a student profile comparison of three participants. The data from this question were also used for the discussion of the results of the study.

Interviews. Eleven participants agreed to follow-up interviews. The interview data were transcribed and subjected to a thematic analysis to identify themes or patterns (Glesne, 2011) and were coded to identify commonalities, or thematic consistency, between participant reports (Glesne, 2011). Qualitative data analysis of the interviews was done in multiple stages (Braun & Clarke, 2006; Miles & Huberman, 1994).

During transcription a document was created that collected and organized the data in a table with three columns. The column headings were established by coordinating the question topics with the antecedent themes that seemed to materialize during the transcription of the interviews (see Figure 1). Column one included the transcribed interviews by participant and was color coded by theme: teachers/administrators/school

climate/parent attitudes highlighted in yellow, LRE/IEP/Academic Supports highlighted in blue, Student Functioning highlighted in green, and Academic/Career Goal highlighted in pink. The color coding was used initially to enumerate categories but this was later abandoned as unwieldy due to the length of the transcribed document. Column two was used to break down, or condense, the verbatim transcription into simplified data chunks reflecting one or multiple categories. Column three was used to further delineate each theme into categories for analysis and enumeration.

Teachers/Administrators/Climate/Parent		
LRE/IEP/Supports		
Student		
Academic/Career Goals		
Category	MEANING CONDENSATION (Kvale/Brinkmann, 2009, p. 206)	Emergent Themes
<p>INT: So this is the draft copy of that IEP?</p> <p>P#13: This is that draft. This is an older one too.</p> <p>INT: She's going to graduate in 2017.</p> <p>P#13 She's actually going to graduate this year from high school and then going on next year to a vocational training program. So that's when she has to leave the school system. She's lucky, she'll have a little extra time.</p> <p>INT: [looking at IEP transition goals] will she be taking classes at NVCC [Northern Virginia Community College]?</p> <p>P#13 No. She's probably not going to do any college type classes at all...</p> <p>INT: what about professional certification programs?</p> <p>P#13: I don't know right now. Our goal for her right now is that she go to the Davis Center. Its part of [their] County public schools and their...whole thing is a job training program. And the kids work at different sites. And they work at a site, and which have one that is for the school year</p>	<p>Extra time in school at a post secondary program</p> <p>Job training program</p>	

Figure 1. Interview transcription and analysis worksheet.

Glesne (2011) describes a variety of techniques that may be used to collect and define qualitative data so that the processes result in a clearly organized system of data analysis. For this investigation a thematic analysis, as described and operationalized by Braun and Clarke (2006), was conducted. In thematic analysis there are six distinct phases; these phases will be described as well as how this researcher applied the principles of each phase.

In phase one I familiarized myself with the data, which included listening to and transcribing interviews. Maxwell (2005) asserts that data analysis methods include additional steps not often described by researchers and can involve initial processes that do not involve putting pen to paper or, in this case, finger to keyboard. I listened to all of the interviews prior to transcription to get a general feel of some of the emergent themes. I then transcribed the interviews in column one of the transcription document.

In phase two I generated initial codes by organizing and grouping data into meaningful categories. The initial analysis of the data included simultaneously identifying categories and condensing the meaning of long statements and compressing them into “briefer statements into which the main sense of what is said is re-phrased [sic] into a few words” (Kvale & Brinkmann, 2009, p. 205). This primary coding categorized participant statements based on themes that emerged through an initial, holistic reading of the interview transcripts.

Phase three is the search for themes through identifying relationships and levels of themes in the data. Phase four is reviewing the emerging themes and refining them. Phase five is defining and naming the themes. This was done by creating another document identifying and enumerating emerging themes, and cross referencing data chunks by interview page number, by individual participants (see Figure 2).

Participant	Teach/Admin/Climate/Parent	LRE/IEP/Supports	Student Functioning	Acad/Career Goals
13	<p>Case manager emailed to alert to potential problems negotiating school (p. 7)</p> <p>Case man unresponsive (p.7)</p> <p>School unresponsive to unique needs (p. 6, 7, 8, 9, 11, 12, 13, 15, 16, 25,)</p> <p>Teacher upset w/toileting accidents "intentional" (p. 12, 13)</p> <p>No teacher training/understanding/support (p. 14, 15, 25, 26,)</p> <p>Publicly humiliated in school w/gloves/security called/ (p.16)</p> <p>Supported/accommodated in self-contained center (p. 17, 18, 19,)</p>	<p>LRE –</p> <p>Inappropriately unsupported/gen ed environment (p. 3)</p> <p>Inappropriate restrictive placement (p. 17)</p> <p>Disciplined for HFA behavior (p. 5, 9, 11, 12, 13, 15, 16)</p> <p>HS could not accommodate counseling so it wasn't provided (p. 5)</p> <p>No supports provided in class (p. 6, 7, 15, 20, 21,)</p> <p>No SocSk (p. 6)</p> <p>Parents provide soc.sk privately (p. 14)</p> <p>IEP accommodations and supports not provided (p. 6, 9, 18, 20, 21,)</p> <p>Services discontinued in HS (p. 14)</p>	<p>Borderline but passed 8th gr SOL (p. 1)</p> <p>Anxiety (p. 4, 12, 15)</p> <p>Compulsive behaviors picking fingers/bleeding (p. 15,</p> <p>Refused to go to school (p. 8)</p> <p>Hides disability (p. 4)</p> <p>Shuts down/rude (p. 4, 5)</p> <p>Verbal skills bely disability (2, 4, 9,)</p> <p>Passed SOLs (p. 11)</p> <p>Has friends in self-contained school (p. 23)</p>	<p>Job training program (p. 1, 18,)</p> <p>Some job placement not appropriate (p. 19)</p> <p>Will be able to work in supported work environment (p. 22)</p>

Figure 2. Emerging themes and cross-reference by interview page number.

The four themes, indexed in the second document, were: teachers/administrators/school climate/parent attitudes, LRE/IEP/academic supports, student functioning, and academic/career goals.

Here the general themes were identified resulting in a framework in preparation for phase six, which is the final analysis of the themes with identification of the categories (see Figure 3), a composition of an analytical narrative, a comparison of participant interviews, and the writing of the final report. During phase six a thematic analysis (Glesne, 2011; Patton, 2002) was used to compare interviews for similarities and differences, in categories and perceptions, of the LRE experience and student goal attainment. This comparison of interviews, in conjunction with the questionnaire data,

helped identify the interviews selected for the student profile comparison representing a maximal variation sampling.

Participant	Teach/Admin/ Climate/Parent	LRE/IEP/Supports	Student Functioning	Acad/Career Goals
44	<p>Good teachers/administrators make a big difference (p. 3, 15, 22, 23, 29, 31)</p> <p>Teachers/admin not educated/don't understand autism/HFA (p. 6, 8-9, 17, 18, 26, 31, 32, 35)</p> <p>Refusal of school/teachers to provide supports in reg ed/adv. Placements (p. 8-9, 20, 21, 23, 24, 32)</p> <p>Misinformation of IEP/LRE/or ignorance of special ed law by school/administrators (p. 8, 21)</p> <p>Lack of coordination between gen ed and sped (p. 15)</p> <p>Parent doing job of teachers/service providers (p. 3, 10, 15)</p> <p>Parent feeling powerless/fighting against the system (p. 6, 21, 23, 24)</p>	<p><u>LRE-</u> Policies/testing driving LRE placement (p. 24)</p> <p>Low expectations/preconceptions of autism driving placement/services (p. 18)</p> <p>Available services driving LRE (p. 20, 21)</p> <p>Teachers not educated in HFA driving LRE (p. 8, 18-19, 21, 23, 32, 35)</p> <p>LRE is enhanced due to flexibility of teachers/admin/policies (p. 15, 29)</p> <p><u>IEP-</u> IEP processes not adhered to/merely a formality/paperwork exercise (p. 13, 23)</p> <p>IEP not followed/services not provided (p. 3, 8, 22, 25)</p> <p>Lack of support results in academic failure (p. 7, 19, 22, 28, 32)</p> <p>Student's unique needs not addressed/satisfactorily met (p. 12, 20, 21, 26)</p>	<p>Completed and passed 3 SOLs before HS</p> <p>Gets along better w/typical peers (p. 16, 30)</p> <p>Punished for HFA behaviors/characteristics (p. 30, 31, 32)</p> <p>Mental health concerns- depression/anxiety (p. 22, 26)</p>	<p>Must access college to meet career goals (p. 6, 27)</p> <p>Social skills critical to career goal achievement (p. 28)</p> <p>Academic level of classes key to academic goal attainment (p. 6, 27)</p>

Figure 3. Round two thematic analysis of interviews.

Overall interview themes and categories. The thematic analysis of all parent ($n = 11$) interviews identified multiple categories under each of the four themes: teachers, administrators, school climate and parent attitudes; LRE, IEP, Academic Supports; Student Functioning; and Academic and Career Goal Attainment. A summary table of all themes and all categories is in Appendix I.

Student profile comparison. A student profile comparison using thematic analysis and cross-case analysis techniques was used to further examine interviews and artifacts from the selected cases for the purpose of providing a deeper examination of the data. The cross-case analysis techniques used to compare the student profiles provided a structure from which to examine the data in a new way.

The three interviews, associated questionnaire, and documentation selected for the student profile comparison represented a maximal variation sampling. Stake (2006) tells us, “When we choose [cases for examination], it is often better to pick the most atypical cases. In fact, highly atypical cases can sometimes give the best insights into the quintain” (p. vii).

For the purposes of the student profile comparison each questionnaire, interview and its associated documentation were considered a profile. Stake (2006) defines the context or “group, category, or phenomenon” (p. 6) of the larger condition to be studied as a quintain. Since I looked at the factors across student profiles to answer the research questions this analysis identified important factors in order to highlight “what is common and different across Cases” (Stake, p. 44).

To explore factors that create barriers to LRE and facilitate access to LRE, student profiles were compared. The quintain for this comparison is: *LRE experienced by high school students with HFA*. The profile comparison regarding access to LRE is organized around two research questions:

1. What are the factors that facilitate access to LRE for students with HFA
2. What are the factors that create barriers to LRE for students with HFA

The student profiles were also compared to explore the factors that emerged based on the academic setting of students and their attainment of academic and career goals. The quintain for this student profile comparison is: *academic and career goal attainment for high school students with HFA*. The student profile comparison regarding how the student's academic placement impacts his or her academic and career goal attainment is organized around two research questions:

1. How has the student's academic placement affected their academic goal attainment?
2. How has the student's academic placement affected their career goal attainment?

This approach is akin to Stake's (2006) Track III, which provides factors for the final analysis. Factors are rated as high (H), moderate (M), or low (L) based on their importance for understanding the quintain. I considered the saturation and strength of the factors within the data in assessing their significance ratings. Worksheets (Stake, 2006) were used to organize the data (see Figure 4).

Worksheet 2. The research questions or Themes of the multicase study and Factors that might be used in a more quantitative study.



Theme 1: Facilitate access to LRE Factors:
Theme 2: Create barriers to LRE Factors:

Worksheet 5. A Matrix for Generating Theme-based Assertions form Important Factor Clusters

Ratings of Importance	From Which Cases?	Themes							
		1	2	3	4	5	6	7	8
Factor Cluster I									
Factor Cluster II									
Factor Cluster III									
Factor Cluster IV									
Factor Cluster V									

Figure 4. Sample worksheets used for student profile comparison.

Document Analysis

The results of the questionnaire and interview data were analyzed to identify themes and to inform a holistic interpretation of the quantitative and qualitative data. Additional documents analyzed included IEPs, medical records, and artifacts of student work provided by participants. The document analysis provided confirmation of the reliability of the data obtained through the questionnaire and the interviews; the documents also provided another level of data when the voices of teachers and administrators were represented in the process of determining LRE. The results of the data analysis were viewed through several conceptual frameworks to determine the contexts, experiences, and impacts of educational placement processes on the goal attainment of students with HFA.

CHAPTER FOUR

The purpose of this explanatory sequential mixed-methods design study was to explore, through parental report, access to LRE for high school students with HFA, how access to LRE impacts academic and career goal attainment, and how students with HFA are experiencing the LRE provision of the IDEA across the Commonwealth of Virginia. To orient the reader, questions from the questionnaire are parenthetically referenced within the results; as well, participants are parenthetically referenced after their questionnaire responses and interview comments.

Results for Research Question One

Research question one asks: What are the relationships between the academic profile (Q14-Q25) of students with HFA and their parent-perceived LRE (Q35, Q46)? Descriptive statistics and nonparametric statistical tests were used to describe the data and determine relationships. First, descriptive statistics for academic profile and parent-perceived LRE were calculated; next the relationships between the academic profile variables and parent-perceived LRE were explored through nonparametric Spearman r_s correlation calculations. Finally, the descriptive statistics for academic profile and parent-perceived LRE by academic setting were calculated.

Academic Profile of All Students with HFA and Parent-Perceived LRE

The academic profile (Q14-Q25) of the students with HFA is described by comparing their academic skill levels to that of their nondisabled, typical peers. The academic profile was established using a 5-point Likert scale: 1 - substantially below his/her nondisabled peers; 2 - somewhat below his/her nondisabled peers; 3 - about the same as his/her nondisabled peers; 4 - somewhat above his/her nondisabled peers; and 5 - substantially above his/her nondisabled peers.

Descriptive statistic results. The range of parent responses on the questionnaire to each question on the academic profile, the mean, and standard deviation for each question, are summarized in Table 5.

Table 5

Descriptive Statistics for Student Profile

Q	Academic skill and LRE	N	Range	Mean	SD
14	Verbal	31	1-5	3.00	1.21
15	Reading/decoding	31	1-5	3.06	1.12
16	Reading/comprehension	31	1-5	2.74	1.24
17	Writing/composition	31	1-5	2.52	1.39
18	Math	31	1-5	2.58	1.29
19	Social Skills	31	1-3	1.48	0.57
20	Executive Functioning	31	1-5	1.84	1.10
21	Working Memory	31	1-5	2.39	0.92
22	Processing Speed	31	1-5	1.84	1.00
23	Functional Skills	31	1-5	2.26	1.09
24	Emotional Maturity	31	1-3	1.68	0.70
25	Eye/hand Coordination	31	1-4	2.26	0.93

Note. Q = question number, 1 = substantially below his/her nondisabled peers, 2 = somewhat below his/her nondisabled peers, 3 = about the same as his/her nondisabled peers, 4 = somewhat above his/her nondisabled peers, 5 = substantially above his/her nondisabled peers.

The academic skill that had the highest mean score was reading/decoding at 3.06 ($SD = 1.12$) and the academic skill that had the lowest mean score was social skills 1.48 ($SD = 0.57$). Only one other academic skill was ranked at a 3 (verbal - $M = 3.00$, $SD = 1.21$), which indicates a skill level on par with nondisabled peers.

Parents ranked the majority, or six, academic skills at a 2, “somewhat below his/her nondisabled peers.” They were reading/comprehension ($M = 2.74$, $SD = 1.24$), writing/composition ($M = 2.52$, $SD = 1.39$), math ($M = 2.58$, $SD = 1.29$), working memory ($M = 2.39$, $SD = 0.92$), functional skills ($M = 2.26$, $SD = 1.09$), and eye/hand coordination ($M = 2.26$, $SD = 0.93$). Other skills parents ranked a 1, at “substantially below nondisabled peers,” were emotional maturity ($M = 1.68$, $SD = 0.70$), executive functioning ($M = 1.84$, $SD = 1.10$), and processing speed ($M = 1.84$, $SD = 1.00$). See Figure 5 for an illustration of average Likert scores of academic skills for all participating students.

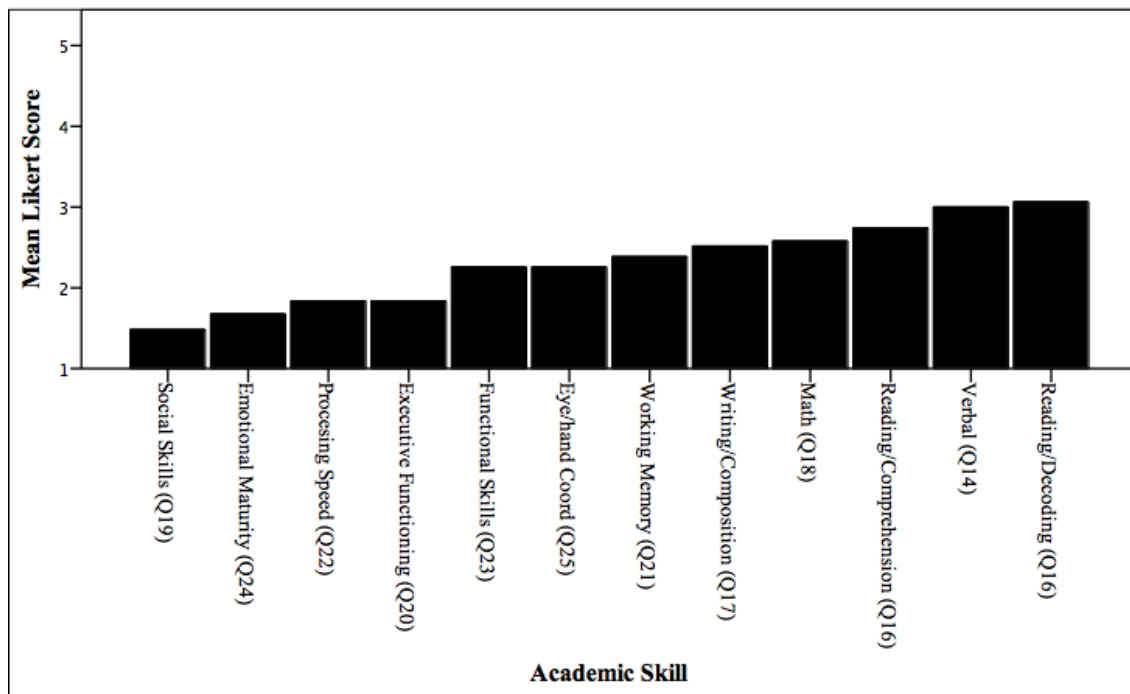


Figure 5. Mean Likert score for academic skills.

The measurement scale for the variable measuring parent perceptions of LRE when compared to nondisabled peers (Q35) used a 5-point Likert scale: 1 - substantially less than his/her nondisabled peers, 2 - somewhat less than his/her nondisabled peers, 3 - about the same as his/her nondisabled peers, 4 - somewhat above his/her nondisabled peers, 5 - substantially above his/her nondisabled peers. The mean score for this variable was 2.23 ($SD = 0.96$), which indicates, on average, parents felt that their child's opportunity to access LRE was "somewhat less than his/her nondisabled peers."

The measurement scale for the variable measuring their child's access to LRE to the "maximum extent appropriate" (Q46) used a 5-point Likert scale: 1- substantially less than was appropriate, 2- somewhat less than was appropriate, 3- inclusion was appropriate, 4- somewhat more than was appropriate, 5- substantially more than was

appropriate. The mean score for parent perceptions that their child was included with nondisabled peers to the maximum appropriate was 2.58 ($SD = 0.99$), which indicates, on average, parents felt that their children were included with nondisabled peers “somewhat less than was appropriate.” A summary of aforementioned results can be found in Table 6.

Table 6

Descriptive Statistics for LRE

Q	LRE	N	Range	Mean	SD
35	Same opportunity to access LRE as nondisabled peers	31	1-5	2.23	0.96
46	Included w/Peers to the maximum extent	31	1-5	2.58	0.99

Note. LRE = least restrictive environment, Q = question number, Q35: 1 = substantially less than his/her nondisabled peers, 2 = somewhat less than his/her nondisabled peers, 3 = about the same as his/her nondisabled peers, 4 = somewhat above his/her nondisabled peers, 5 = substantially above his/her nondisabled peers; Q46: 1 = substantially less than was appropriate, 2 = somewhat less than was appropriate, 3 = about the same as was appropriate, 4 = somewhat more than was appropriate, 5 = substantially more than was appropriate.

Relationships between academic profile of all students with HFA and parent-perceived LRE. In order to explore the relationship of the 11 variables (Q14 – verbal, Q15 – reading/decoding, Q16 – reading comprehension, Q17 – writing/composition skills, Q18 – math skills, Q19 – social skills, Q20 – executive functioning, Q21 – working memory, Q22 – processing speed, Q23 – functional skills, Q24 – emotional maturity, Q25 – eye/hand coordination) within the parent-reported academic profile of each student to their parent-perceived LRE (Q35 – same opportunity to access LRE as

nondisabled peers, Q46 – included in academic programs as nondisabled peers “to the maximum extent appropriate”), nonparametric Spearman r_s tests were conducted.

Spearman r_s assumptions. The first assumption of the Spearman r_s , that the data be ordinal (Warner, 2013), is met through the Likert-scale construction of the questions. The scale for the student profile questions (Q14-Q25) is: 1 – substantially below his/her nondisabled peers, 2 – somewhat below his/her nondisabled peers, 3 – about the same as his/her nondisabled peers, 4 – somewhat above his/her nondisabled peers, 5 – substantially above his/her nondisabled peers. The scale for question 35 is: – substantially less than his/her nondisabled peers, 2 – somewhat less than his/her nondisabled peers, 3 – about the same as his/her nondisabled peers, 4 – somewhat above his/her nondisabled peers, 5 – substantially above his/her nondisabled peers. The scale for question 46 is: 1 – substantially less than was appropriate, 2 – somewhat less than was appropriate, 3 – inclusion was appropriate, 4 – somewhat more than was appropriate, 5 – substantially more than was appropriate. The second assumption of the Spearman r_s , that there is a monotonic relationship between the variables (Warner, 2013), was checked by creating scatter plots of the variables.

A significant correlation indicating a reliable relationship between variables is strong when the Spearman r_s shows a correlation greater than 0.7, a reliable relationship between variables is moderate with correlations between 0.3 and 0.7, and a reliable relationship between variables is weak with correlations less than 0.3 (Cronk, 2010).

Nonparametric correlation statistic results. Moderate positive correlations that were statistically significant at the .05 level were found between parental perception of

whether their child had the same opportunity to access LRE as nondisabled peers and good academic skills in reading comprehension ($r_s(29) = .416, p = .020$), reading – decoding ($r_s(29) = .406, p = .023$), and math ($r_s(29) = .363, p = .045$), indicating moderate linear relationships between the variables.

Weak correlations that were not statistically significant were found between parental perception of whether their child had the same opportunity to access LRE as nondisabled peers and eye/hand coordination ($r_s(29) = -.013, p = .943$), social skills ($r_s(29) = -.101, p = .588$), emotional maturity ($r_s(29) = -.066, p = .722$), functional skills ($r_s(29) = .142, p = .447$), executive functioning ($r_s(29) = .204, p = .270$), verbal skills ($r_s(29) = .251, p = .173$), processing speed ($r_s(29) = .313, p = .087$), writing composition ($r_s(29) = .319, p = .080$), and working memory ($r_s(29) = .328, p = .072$). Perceptions of eye/hand coordination, social skills, emotional maturity, functional skills, executive functioning, verbal skills, processing speed, writing composition, and working memory are not related to parent perceptions of whether their child had the same opportunity to access LRE as their nondisabled peers.

A Spearman r_s was calculated to investigate the relationship between parental perception of whether their child was included in academic environments “to the maximum extent appropriate” (Q46) and their perceptions of their child’s academic skills, as compared to their nondisabled peers, in: verbal skills (Q14); reading decoding – sounding out words (Q15); reading comprehension – understanding what he/she reads (Q16); writing/composition skills (Q17); math skills (Q18); social skills (Q19); executive functioning – ability to organize, judge time, plan (Q20); working memory – problem

solving while remembering (Q21); processing speed – process information automatically and quickly (Q22); functional skills – take care of personal needs, manage household chores, anticipate required needs (Q23); emotional maturity – ability to control emotions under stress (Q24); eye/hand coordination – ability to guide hand movement guided by vision, e.g. handwriting (Q25).

Moderate positive correlations that were statistically significant at the .02 level were found between parental perception of whether their child was included in academic environments “to the maximum extent appropriate” (Q46) and their perceptions of their child’s academic skills, as compared to their nondisabled peers, in working memory ($r_s(29) = .464, p = .009$) and processing speed ($r_s(29) = .415, p = .020$), indicating moderate linear relationships between the variables. Weak correlations that were not statistically significant were found between parental perception of whether their child was included in academic environments “to the maximum extent appropriate” and verbal skills ($r_s(29) = -.134, p = .473$), reading decoding ($r_s(29) = -.045, p = .811$), reading comprehension ($r_s(29) = .002, p = .992$), writing/composition skills ($r_s(29) = .103, p = .582$), math skills ($r_s(29) = .189, p = .307$), social skills ($r_s(29) = -.035, p = .851$), executive functioning ($r_s(29) = .128, p = .494$), functional skills ($r_s(29) = .258, p = .160$), emotional maturity ($r_s(29) = .040, p = .829$), eye/hand coordination ($r_s(29) = -.014, p = .942$). Perceptions of verbal skills, reading decoding, reading, writing/composition skills, math skills, social skills, executive functioning, functional skills, emotional, and eye/hand coordination were not related to parent perceptions of whether their child was included in academic environments “to the maximum extent appropriate.”

Academic Profile of Students with HFA and Parent-Perceived LRE by Academic Setting

Descriptive statistics were calculated to compare the academic profile (Q14-Q25) of students with HFA and their parent-perceived LRE (Q35, Q46) by student groups based on student's current academic setting (Q29): students served in a self-contained setting ($n = 10$) and students served in a general education setting ($n = 21$). The results are shown in Table 7.

Table 7

Descriptive Statistics for Student Profile and Perceptions of LRE by Academic Setting

Q	Academic skill and LRE	Academic setting					
		SpEd (<i>n</i> = 10)			GenEd (<i>n</i> = 21)		
		Score range	Mean	<i>SD</i>	Score range	Mean	<i>SD</i>
14	Verbal	1-4	2.20	1.03	2-5	3.30	1.11
15	Reading/decoding	1-4	2.30	1.06	2-5	3.43	0.98
16	Reading/comprehension	1-4	1.80	1.03	1-5	3.19	1.08
17	Writing/composition	1-3	1.40	0.70	1-5	3.05	1.32
18	Math	1-4	2.00	1.05	1-5	2.85	1.31
19	Social Skills	1-2	1.40	0.52	1-3	1.52	0.60
20	Executive Functioning	1-4	1.90	0.99	1-5	1.81	1.17
21	Working Memory	1-3	1.90	0.74	1-5	2.62	0.92
22	Processing Speed	1-2	1.30	0.48	1-5	2.10	1.09
23	Functional Skills	1-4	2.00	1.15	1-5	2.38	1.07
24	Emotional Maturity	1-3	1.50	0.71	1-3	1.76	0.70
25	Eye/hand Coordination	1-3	1.80	0.79	1-4	2.48	0.93
46	Included w/Peers to the maximum extent	1-3	2.20	1.23	1-5	2.48	0.93
35	Same opportunity to access LRE as nondisabled peers	1-5	1.70	0.82	1-5	2.76	0.83

Note. LRE = least restrictive environment, GenEd = general education placement 80% or more of the day, SpEd = special education placement more than 60% of the day. Q14-25: 1 = substantially below his/her nondisabled peers, 2 = somewhat below his/her nondisabled peers, 3 = about the same as his/her nondisabled peers, 4 = somewhat above his/her nondisabled peers, 5 = substantially above his/her nondisabled peers; Q35: 1 = substantially less than his/her nondisabled peers, 2 = somewhat less than his/her nondisabled peers, 3 = about the same as his/her nondisabled peers, 4 = somewhat above his/her nondisabled peers, 5 = substantially above his/her nondisabled peers; Q46: 1 = substantially less than was appropriate, 2 = somewhat less than was appropriate, 3 = about the same as was appropriate, 4 = somewhat more than was appropriate, 5 = substantially more than was appropriate.

Mean scores on almost all academic skills (Q14-Q19, Q21-25) were lower for students who are served in a self-contained setting than for students who are served in a general education setting. The academic skills that showed the widest range (> 1) between students in self-contained settings and students in general education settings were: verbal, reading/decoding, reading/comprehension, and writing/composition.

Academic skills that showed the least difference ($\leq .50$) on the Likert scale between the self-contained group and the general education group were: social skills, executive functioning, functional skills, and emotional maturity. Students in self-contained settings had a higher mean score ($M = 1.90$; $SD = 0.90$) in one skill, executive functioning (Q20), than students in general education settings ($M = 1.81$; $SD = 1.87$). A comparison of the Likert scale means for student academic skills by academic setting is illustrated in Figure 6.

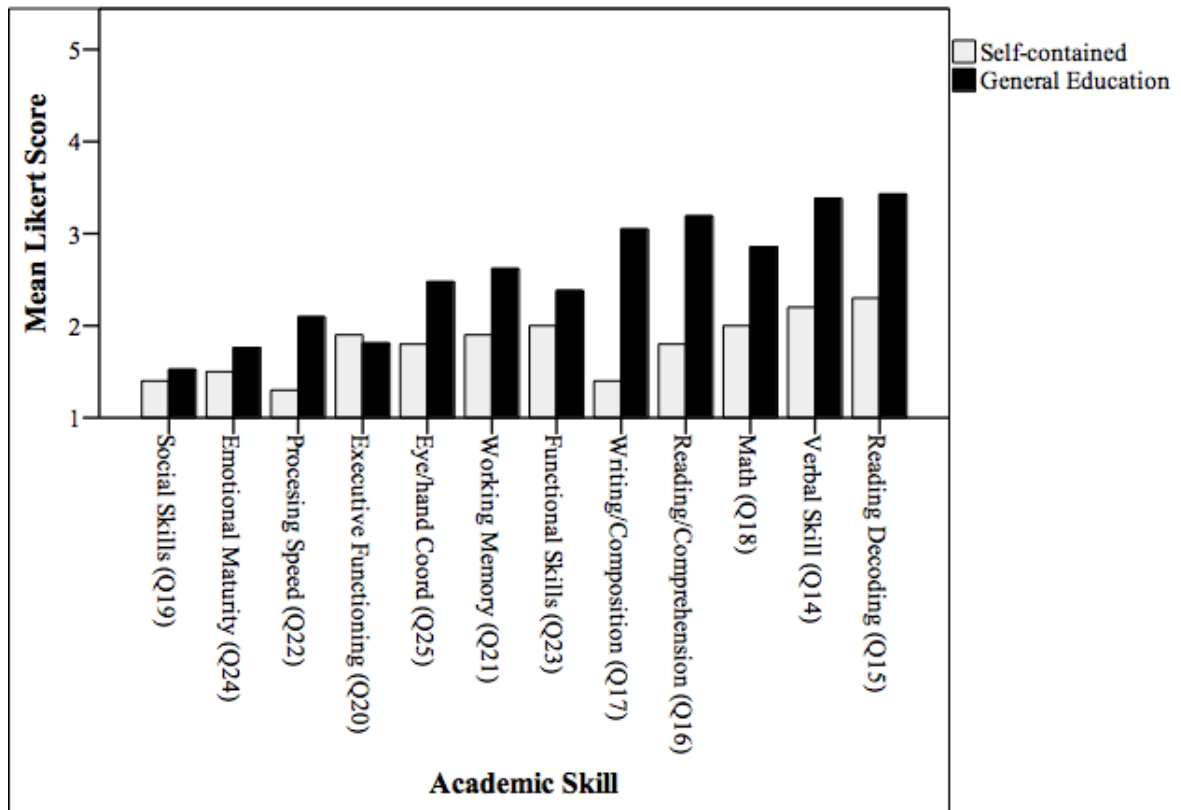


Figure 6. Mean Likert score for academic skills by academic setting.

When asked whether their children had the “same opportunity to access LRE as nondisabled peers” (Q35), parents of the students served in a self-contained setting had a mean score of 1.70 ($SD = 0.82$), “substantially less than their nondisabled peers”; whereas the mean score for parents of students in general education classrooms had a mean score of 2.76 ($SD = 0.83$), “somewhat less than their nondisabled peers.” This showed a difference of over 1 point between the groups. When asked if their child was “included in academic programs as nondisabled peers *to the maximum extent appropriate*” (Q46) the mean score for parents of students served in a self-contained setting was 2.20 ($SD = 1.23$) whereas the mean score for parents of students served in a general education setting was 2.48 ($SD = 0.93$); this rank score corresponds to the response that inclusion *to the maximum extent appropriate* was “somewhat less than was appropriate.”

Results for Research Question Two

Research question two asks: Does parental perception of access to LRE (Q35, Q46) relate to parent’s perception of student’s academic (Q47) and career goal attainment (Q49)? Descriptive statistics and nonparametric procedures were conducted to describe the data and determine relationships.

Parent-Perceived LRE and Academic and Career Goal Attainment for All Students with HFA

Descriptive statistics for perception of access to LRE (Q35, Q46) and student’s academic (Q47) and career goal attainment (Q49) followed the description of the measurement scale. The measurement scale for the variable measuring parent perceptions

of the extent to which they felt their child had the same opportunities to access general education classes, advanced classes, Advanced Placement classes, International Baccalaureate classes, or enriched educational experiences as their typical, nondisabled peers (Q35) uses a 5-point Likert scale: 1– substantially less than his/her nondisabled peers, 2 – somewhat less than his/her nondisabled peers, 3 – about the same as his/her nondisabled peers, 4 – somewhat above his/her nondisabled peers, 5 – substantially above his/her nondisabled peers. The measurement scale for the variable measuring their child’s access to LRE to the “maximum extent appropriate” (Q46) uses a 5-point Likert scale: 1 – substantially less than was appropriate, 2 – somewhat less than was appropriate, 3 – inclusion was appropriate, 4 – somewhat more than was appropriate, 5 – substantially more than was appropriate.

The measurement scale for the variable measuring parent’s perception of to what extent their children’s LRE will affect their academic (Q47) and career goal attainment (Q49) uses a 5-point Likert scale: 1 – substantially limit their academic/career goal attainment; 2 – somewhat limit their academic/career goal attainment, 3 – neither limit nor advance their academic/career goal attainment, 4 – somewhat advance their academic/career goal attainment, 5 – substantially advance their academic/career goal attainment. The mean Likert score for the total sample ($N = 31$) follows.

Descriptive statistic results. Parental perception that their child had the same opportunity to access LRE as nondisabled peers (Q35) showed a mean score of 2.23 ($SD = 0.96$), “somewhat less than his/her nondisabled peers.” Parental perception that their child was able to be included in academic programs “to the maximum extent appropriate”

(Q46) showed a mean score of 2.58 (SD = 0.99), “somewhat less than was appropriate.” Parental perception of their child’s academic goal attainment (Q47) showed a mean score of 3.00 (SD = 1.32), “neither limit nor advance their academic goal attainment”; (Q49) showed a mean score of 2.97 (SD = 1.93), “somewhat limit their academic/career goal attainment” (see Table 8).

Table 8

Descriptive Statistics for Perceptions of LRE and Academic and Career Goal Attainment

LRE and academic and career goal attainment	<i>N</i>	Range	Mean	<i>SD</i>
Access LRE (Q35)	31	1-5	2.23	0.96
Maximum LRE (Q46)	31	1-5	2.58	0.99
Academic Goal Attainment (Q47)	31	1-5	3.00	1.32
Career Goal Attainment (Q49)	31	1-5	2.97	1.30

Note. Access LRE = same opportunity to access LRE as nondisabled peers, LRE = least restrictive environment, Maximum LRE = included in academic programs as nondisabled peers “to the maximum extent appropriate.” Q35: 1 = substantially less than his/her nondisabled peers, 2 = somewhat less than his/her nondisabled peers, 3 = about the same as his/her nondisabled peers, 4 = somewhat above his/her nondisabled peers, 5 = substantially above his/her nondisabled peers; Q46: 1 = substantially less than was appropriate, 2 = somewhat less than was appropriate, 3 = about the same as was appropriate, 4 = somewhat above than was appropriate, 5 = substantially above than was appropriate; Q47: 1 = substantially limit academic goal attainment, 2 = somewhat limit academic goal attainment, 3 = neither limit nor advance academic goal attainment, 4 = somewhat advance academic goal attainment, 5 = substantially advance academic goal attainment; Q49: 1 = substantially limit career goal attainment, 2 = somewhat limit career goal attainment, 3 = neither limit nor advance career goal attainment, 4 = somewhat advance career goal attainment, 5 = substantially advance career goal attainment.

Figure 7 illustrates the average Likert scores for LRE and academic and career goal attainment.

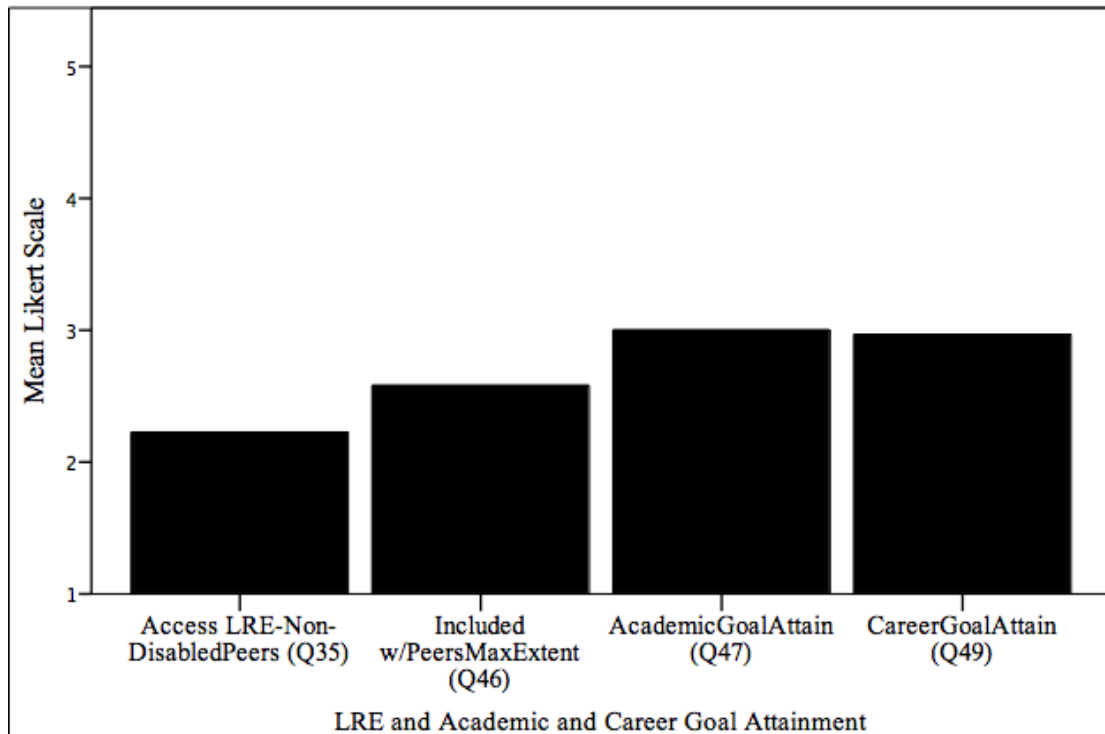


Figure 7. Mean Likert scores for least restrictive environment (LRE) and academic and career goal attainment.

Relationship between parent-perceived LRE and academic and carrier goal attainment for all students with HFA. In order to explore the relationship between potential academic (Q47) and career (Q49) goal attainment and parent-perceived LRE (Q35, Q46) a nonparametric Spearman r_s correlation coefficient was calculated. The two assumptions of the Spearman r_s , that the data be ordinal (Warner, 2013) and that there is a monotonic relationship between the variables (Warner, 2013), were met.

Nonparametric correlation statistic results. Moderate positive correlations that were significant at the .01 level were found between parental perceptions of whether their child was included in academic environments “to the maximum extent appropriate” (Q46) and academic goal attainment ($r_s (29) = .612, p < .01$) and career goal attainment

($r_s(29) = .631, p < .01$). Moderate positive correlations that were significant at the .01 level were also found between parental perceptions of whether their child had the same opportunity to access LRE as their nondisabled peers (Q35) and academic goal attainment ($r_s(29) = .475, p < .01$) and career goal attainment ($r_s(29) = .575, p < .01$).

Parent-Perceived LRE and Academic and Career Goal Attainment by Academic Setting

When asked if their children had the “same opportunity to access LRE as nondisabled peers” (Q35), parents of students served in a general education setting ($n = 21$) had a mean score of 2.76 ($SD = 0.83$) whereas parents of students served in a self-contained setting ($n = 10$) had a mean score of 1.70 ($SD = 0.82$). When asked if their child was “included in academic programs as nondisabled peers *to the maximum extent appropriate*” (Q46) the parents of students served in a self-contained setting had a mean score of 2.20 ($SD = 1.23$) whereas the mean score for parents of students served in a general education setting was 2.48 ($SD = 0.93$). Parents were also asked to what extent they felt their child’s current class placements would allow them to meet their future career (Q49) and academic goals (Q47). Parents of students served in a self-contained setting had a mean score of 2.60 ($SD = 1.43$), somewhat limit their career goal attainment; and parents of students served in a general education setting had a mean score of 3.14 ($SD = 2.14$), neither limit nor advance their career goal attainment. For academic goal attainment self-contained, parents of special education students had a mean score of 2.50 ($SD = 1.35$), somewhat limit their academic goal attainment; and parents of students

served in a general education setting had a mean score of 3.24 ($SD = 1.26$), neither limit nor advance their academic goal attainment (see Table 9).

Table 9

Descriptive Statistics for Perceptions of LRE and Academic and Career Goal Attainment by Academic Setting

LRE and academic and career goal attainment	Academic setting					
	SpEd ($n = 10$)			GenEd ($n = 21$)		
	Score range	Mean	SD	Score range	Mean	SD
Access LRE (Q35)	1-3	1.70	0.82	1-5	2.76	0.83
Maximum LRE (Q46)	1-5	2.20	1.23	1-5	2.48	0.93
Academic Goal Attainment (Q47)	1-5	2.50	1.35	1-5	3.24	1.26
Career Goal Attainment (Q49)	1-5	2.60	1.43	1-5	3.14	2.14

Note. Access LRE = same opportunity to access LRE as nondisabled peers, GenEd = general education placement 80% or more of the day, LRE = least restrictive environment, Maximum LRE = included in academic programs as nondisabled peers “to the maximum extent appropriate,” SpEd = special education placement more than 60% of the day. Q35: 1 = substantially less than his/her nondisabled peers, 2 = somewhat less than his/her nondisabled peers, 3 = about the same as his/her nondisabled peers, 4 = somewhat above his/her nondisabled peers, 5 = substantially above his/her nondisabled peers; Q46: 1 = substantially less than was appropriate, 2 = somewhat less than was appropriate, 3 = about the same as was appropriate, 4 = somewhat above than was appropriate, 5 = substantially above than was appropriate; Q47: 1 = substantially limit academic goal attainment, 2 = somewhat limit academic goal attainment, 3 = neither limit nor advance academic goal attainment, 4 = somewhat advance academic goal attainment, 5 = substantially advance academic goal attainment; Q49: 1 = substantially limit career goal attainment, 2 = somewhat limit career goal attainment, 3 = neither limit nor advance career goal attainment, 4 = somewhat advance career goal attainment, 5 = substantially advance career goal attainment.

Results for Research Question Three

Research question three asks: What are the factors that facilitate access to LRE, or create barriers to LRE, for students with HFA, as reported by their parents? The data sources used to answer this question were two open-ended questions (Q54, Q55) on the questionnaire and the results of a thematic analysis of the interviews.

Barriers Preventing Students with HFA From Accessing LRE

An examination of barriers preventing students with HFA from accessing LRE was conducted using open-ended questions from the questionnaire and a thematic analysis of the interview data. First, themes from the questionnaire data are reported. Following this is an identification of themes that emerged from the interview data. Finally, a synthesis of the data from the questionnaires and interviews identifies overarching themes.

Qualitative data from the questionnaires. Qualitative responses obtained from the questionnaire regarding barriers preventing students with HFA from accessing LRE (Q54) were coded, sorted, analyzed, and categorized. Twenty-nine participants (94%) answered the open-ended question regarding barriers to LRE; one participant did not answer (P52) and one participant responded with “not sure” (P23). An analysis of the data revealed five themes related to barriers to LRE. In order of frequency they are: lack of knowledge and/or training of HFA for teachers, staff, administrators, counselors, and/or parents; lack of academic support, assistance, or accommodations for student; student academic functioning; student social skills; and lack of accommodations in advanced classes. The themes are enumerated and the percentage of participants identifying each theme is shown in Table 10.

Table 10

Questionnaire Theme Summary for Barriers That Prevent Students with High-Functioning Autism to Access Least Restrictive Environment by Participant, Frequency of Theme, and Percentage of Participants with Identified Theme

Theme	Participant	Frequency of theme among participants	Percentage of participants with identified theme
Lack of knowledge/training of HFA for teachers/counselors/parents	13, 28, 37, 44, 91, 92, 93, 95, 101, 103, 111	11/29	38%
Lack of academic support, assistance, or accommodations for student	4, 22, 40, 41, 45, 51, 55, 81, 100, 104, 111	11/29	38%
Student academic functioning	13, 28, 51, 98, 102, 104	6/29	21%
Student social skills	27, 37, 81, 102, 109	5/29	17%
Lack of accommodations in advanced classes	57, 79, 80, 81	4/29	14%

Qualitative data from the interviews. An analysis of the interviews revealed five themes specific to factors that create barriers to LRE: teachers not educated in HFA driving LRE; available services driving LRE; low expectations/preconceptions of autism driving placement and/or services; division policies, school policies, and/or testing policies driving placement; and parent fears about staff and/or students within an academic environment affect LRE. The themes are enumerated and the percentage of participants identifying each theme is shown in Table 11.

Table 11

Interview Theme Summary of Barriers to Least Restrictive Environment by Participant, Frequency of Theme, and Percentage of Participants with Identified Theme

Theme	Participants with theme	Frequency of theme among participants	Percentage of participants with theme
Teachers not educated in HFA driving LRE	4, 13, 23, 44, 45, 52, 55, 81, 92	9/11	82%
Available services driving LRE	13, 23, 44, 45, 52, 55, 81, 92	8/11	73%
LRE: Low expectations/preconceptions of autism driving placement/services	4, 23, 44, 45, 52, 55, 92	7/11	64%
Policies/testing driving LRE placement	13, 23, 44, 45, 52, 92	6/11	55%
Parent fears about staff/students affect LRE	13, 23, 52, 55, 92	5/11	45%

Note. HFA= High-Functioning Autism, LRE = Least Restrictive Environment.

Overarching themes identifying barriers to LRE. This section provides the description of major overarching themes that emerged from the questionnaire responses to the question about barriers to LRE and the thematic analysis of the interview data. Three overarching themes identifying barriers to LRE emerged from the synthesis of questionnaire and interview data: teacher training and education, services and supports available in the academic setting, and parent fears discourage seeking of LRE placement.

Teacher training and education. Teacher training and education was a key theme across participants. Questionnaire participants identified the lack of training and education as a primary barrier to LRE. One parent noted a, “Lack of experience to modify and adapt the curriculum” (P93) while another stated, “General ed teachers are not familiar or trained to deal with students with disabilities [sic] nor do they want them in their classes most of the time.” (P95).

Many parents answering the questionnaire expressed frustration over the lack of teacher training impacting teacher attitudes about their child’s inclusion in LRE:

Lack of interest and training; to the school these children are a problem and are treated as a non-disability child is treated. Regardless of IEP in place, children high functioning are placed in the rear and seldom heard from their teachers or faculty. (P91)

One parent felt sympathy for teachers who had difficulty accommodating their child’s access to LRE due to a lack of training:

I do think, on the schools part, that they care a whole lot and are very open to inclusion, but they really know so little about autism. They THINK they know more than they actually know. (P28)

Nine out of the 11 parents who were interviewed reported that teachers who were not educated in HFA were instrumental in the decision of whether or not their child was placed in an inclusive academic setting. One mother whose son was primarily in self-contained classes described the decision-making process of whether her son should be in a general education class:

Some of these decisions are made, like... a self-contained, as opposed to a team taught, because of prior history that you understood about the teachers that may teach that class. And you did not want your student who had any form of disability to be in a classroom that was not going to be in a classroom where the history or understanding of a particular teacher was going to support persons with disability. So you opted as a parent to have them in a self-contained classroom for, I'm going to use the word safety, for a protected and understood environment. I was taking the chance that they'd be better understood there than in what you understood was going to be maybe an environment that would not support them. And I don't mean necessarily.... I was going to clarify that, I don't necessarily mean peers, I mean, professionals.... (P92)

Several parents talked about teachers advocating for a less-inclusive environment for a student because they did not feel comfortable with a student with HFA in their classroom. This mother describes a discussion that occurred at an IEP meeting with a teacher about including her daughter in an advanced class:

They should have some kind of professional development that will prepare them to at least know where to go to get the support for the child that they have versus just trying to get them out of their class.... So they ended up keeping it like it was, keeping her schedule like it was. So I will say to answer that question, it was definitely a struggle at the table. Because they were avoiding her because of their lack of knowledge. *Trying* to avoid her anyway. (P44)

Services and supports available in the academic setting. The services and supports that were made available in the academic setting were often seen as barriers to LRE by parents. Some parents who answered this question on the questionnaire felt that the lack of accommodations that teachers of advanced classes were willing to implement was a barrier to LRE for their child: “Co-taught classes are limited to the “standard diploma” classes; you cannot get additional help in intensified or advanced classes. Teachers in advanced classes perceive students with extra needs as being a drain on their classes” (P57).

Many parents who were interviewed discussed how their children’s academic placement was dictated by the IEP accommodations and supports teachers were “willing” to provide. A mother reflects on the barriers she encounters when teachers dismiss her daughter’s IEP accommodations:

And what I heard this 5,000 times when [daughter] was in honors Algebra I.

“Well I expect more from an honor’s student and we’re not going to do that kind of exception [IEP accommodation] in an honor’s class.” And so basically they were saying, you know, special needs kids are not welcome in honors classes.

And that’s what it came down to. We just gave up on that because a particular guy who ran it.... I knew we were getting nowhere and that isn’t her strength. (P81)

During an interview, one parent recounted how her son’s academic placement was dependent on his ability to access job services through the school. He was one class away from obtaining a regular diploma but that would disqualify him from job services:

So it was working backward, from what was that goal going to be. And I remember struggling with it, because...and going back and forth, and back and forth, about what do we want to do for the student, my kid, the student. Because... and here's the argument, this is why it changed... and it since changed anyway, because we don't have modified [diplomas] in this county anymore. If we were going to consider a postsecondary [work skills] program and I knew a little about postsecondary programs, if he had a standard diploma, he would not be a candidate. You must have a modified or certificate, something else...if you carried a standard diploma, that may have changed since because things look different now, you were not going to be eligible for a postsecondary program.... Yup. It was a, what I call working backward. What is your goal at the end? Because I remember staff...you can quote me on this, saying to me, "if you think this is a possibility [to graduate with a regular diploma], he will not qualify for most programs," and they weren't knowing of programs necessarily that much themselves to offer this, with a standard [diploma]. (P92)

Parent fears discourage seeking of LRE placement. The final overarching theme regarding barriers to accessing LRE was parent fears that low academic or social skills of their children would create harmful interactions in an academic setting. This theme is closely related to the other two overarching themes in that the lack of teacher education and classroom supports often caused fear in parents that their child would be in some way harmed due to a lack of educated staff or available supports in the classroom. A parent

who answered the questionnaire talked about not pursuing a recommended program due to a lack of support by staff:

The teacher doesn't have the time to deal with behavioral issues or students who need accommodations and so would prefer not to have the extra work. We never applied for the Talented and Gifted Program, even though it was suggested in middle school, because it just seemed like extra work for not much gain. (P111)

During the interviews some parents of students who were in a self-contained setting expressed how fear for their children's well-being impacted their decision to have them in a more restrictive environment. The words "safety" or "afraid" were used in five interviews. This mother describes her struggle with the inappropriate way her son was disciplined by untrained staff. In her view, for having autism characteristics:

However, some of our decisions about whether to fight about certain things were heavily flavored with how they've dealt with him before. Being in the environment he's in, we have a lot less of being expelled and sent home for being on the autism spectrum. And that's what it is, it's always an exhibition of his diagnosis and it gets him sent home. And he's had a lot less problem with that where he is. So it's kind of a balancing act. We would like him to grow but he's going to have to grow with help, and if they won't give him help, he's actually better someplace safe and we look more towards him gaining independence somewhere else. But they can't do that now. (P55)

This mother recounts how an inappropriate placement led to the bullying of her son and how this impacted her decision to place him in a self-contained physical education (PE) class:

When he started at [high school] they put him in the ED program and I made them move him out of there. The kids there thought he was a freak and he thought they were a freak and it was horrible. They used to beat him up. So I finally got them to move him out of there to the LD self-contained classes.... He did adaptive PE because I was afraid of the other kids hurting him. I told them if something happens to him, there will be another lawyer. (P23)

Factors That Facilitate Access to LRE for Students with HFA

An examination of supports facilitating access to LRE for students with HFA was conducted using open-ended questions from the questionnaire and a thematic analysis of the interview data. Themes from the questionnaire data are addressed and identification of Themes that emerged from the interview data are identified. Overarching themes are identified from a synthesis of the data from the questionnaires and interviews.

Qualitative data from questionnaires. Twenty-eight parents (90%) answered the open-ended question regarding supports that assist students with HFA in accessing LRE (Q55); two participants (P52, P80) did not answer, and one participant answered, “don’t know” (P44). One parent responded “none” (P91). In order of frequency the identified themes were: academic supports and using special interests to support academics, trained teachers/staff/parents, good teachers/staff, accommodations, small

class size, and social skills instruction. The themes are enumerated and the percentage of participants identifying each theme is shown in Table 12.

Table 12

Questionnaire Theme Summary for Supports that Assist Students with High-Functioning Autism to Access Least Restrictive Environment by Participant, Frequency of Theme, and Percentage of Participants with Identified Theme

Theme	Participant	Frequency of theme among participants	Percentage of participants with identified theme
Academic supports and using special interests to support academics	4, 22, 27, 28, 41, 45, 55, 57, 81, 92, 93, 98, 100, 104,	14/28	50%
Trained teachers/staff/parents	23, 28, 37, 95, 101, 102, 103, 104	8/28	29%
Good teachers/staff	13, 81, 92, 101, 109, 111	6/28	21%
Accommodations	40, 41, 46, 55, 79	5/28	18%

Qualitative data from interviews. An analysis of the interview themes revealed one theme specific to factors that facilitate access to LRE: LRE is enhanced due to flexibility of teachers, administrators, and/or school policies. A majority of parents interviewed discussed that flexibility by teachers, administrators, and policies were important in their child accessing LRE.

Overarching themes. There was one major overarching theme that emerged from the synthesis of the questionnaire responses to the question about supports that facilitate

access to LRE and the thematic analysis of the interview data. The theme was: good teaching practice enhances LRE.

Good teaching practice enhances LRE. Many of the factors described by parents that helped facilitate their child's access to LRE described good teaching practice. Parents who answered the questionnaire mentioned several good teaching practices to include individualized instruction, respecting the student, and setting high goals. Two parents cited, "Individualized and differentiated assignments" (P93) and "what supports the student with autism is to treat him/her as a regular person, letting him/her know what is expected of him/her in the classroom" (P111). The use of special interests to enhance academics was also mentioned on the questionnaire:

What has worked well and made a difference in my child's life is the ability of a teacher (or other) to get to know my child, his interests, and create ways for him to use these as links to his academics (P92).

Or in other words, teachers should "allow students to use strengths to show what they have learned, engage students strengths and support weaknesses" (P22).

During the interviews participant 44 noted that the school her daughter attended allowed her daughter to make up credits in summer school so she could continue to access a special program, "You can go back to the program. You can have...they are really, really flexible." Another parent talked about her son's general education science and social studies teachers in accommodating her son by allowing him do work at home and turn it in later:

He's mostly passing it. Some days are iffy—what they usually do if they can't get him to do any of his work, they send that home and we do it at home and then it goes back out. These are the ones that are graded but he's paying attention and both of those teachers are cool with that. (P51)

Results for Research Question Four

Research question four asks: How has the student's academic placement affected their academic and career goal attainment, as reported by their parents? The data sources used to answer this question were two qualitative questions (Q47, Q50) on the questionnaire and the results of a thematic analysis of the interviews.

Academic Placement and Academic Goal Attainment

An examination of how academic placement affects academic goal attainment was conducted using open-ended questions from the questionnaire and a thematic analysis of the interview data. Themes from the questionnaire data are identified. Afterwards identification of themes that emerged from the interview data are enumerated. Finally a synthesis of questionnaire and interview data will identify overarching themes.

Qualitative data from questionnaires. Qualitative responses obtained from the questionnaire regarding academic placement and its impact on academic goal attainment (Q48) were coded, sorted, analyzed, and categorized. These two questions were used to expand on a Likert scale questions (Q47) about whether the participant's child's academic placement will help their child attain their academic goals.

Thirty-one participants (100%) answered the Likert scale question (Q47) regarding parental opinion about academic placement and its affect on their children's

academic goal attainment. Thirty participants (97%) expanded on their opinion and answered the open-ended question (Q48) about academic placement and its affect on their children's academic goal attainment; one participant (P40) did not answer the open-ended question. An analysis of the data revealed six themes. In order of the highest percentage of categories shared by participants they are: level of classes or supports prepared student for college, skill deficit will hinder academic goal attainment, cannot get needed classes or placements that would help student achieve academic goals, needs accommodations to attain academic goals, academic setting is appropriate to attain academic goals. The themes are enumerated and the participants associated with each theme are shown in Table 13.

Table 13

Questionnaire Theme Summary for Academic Goal Attainment by Participant, Frequency of Theme, and Percentage of Participants with Identified Theme

Theme	Participant	Frequency of theme among participants	Percentage of participants with identified theme
Level of classes or supports prepared student for college	4, 27, 28, 57, 79, 80, 98, 101, 109	9/30	30%
Skill deficit will hinder academic goal attainment	23, 44, 45, 52, 93, 103, 111	7/30	23%
Cannot get needed classes or placements that would help student attain academic goals	22, 37, 41, 55, 91, 92, 102	7/30	23%
Academic setting is appropriate to attain academic goals	13, 95, 100, 104, 111	5/30	17%
Needs accommodations to attain academic goals	28, 46, 51, 81	4/30	13%

Qualitative data from interviews. A thematic analysis of the interviews revealed three themes under the area of academic and career goal attainment that addressed how academic placement affected academic goal attainment: social skills critical to academic goal attainment, academic level of classes key to academic goal attainment, and academics abandoned when career skills chosen. The last theme was found only among parents whose children were in a self-contained environment and influenced career goal attainment as well (Table 14).

Table 14

Interview Theme Summary of Academic Goal Attainment by Participant, Frequency of Theme, and Percentage of Participants with Identified Theme

Theme	Participant	Frequency of theme among participants	Percentage of participants with identified theme
Social skills critical to academic goal attainment	4, 23, 27, 51, 55, 81	6/11	55%
Academic level of classes key to academic goal attainment	13, 27, 44, 55, 81	5/11	45%
Academics abandoned when career skills chosen	13, 45, 52, 92	4/11	36%

Overarching themes. This section provides the description of major overarching themes that emerged from the questionnaire responses to the question about academic goal attainment and the thematic analysis of the interview data. There were two overarching themes identifying how academic setting affects academic goal attainment: the appropriateness of the class setting for meeting academic goals, and the appropriate development of academic and social skills for meeting academic goals.

The appropriateness of the class setting for meeting academic goals. The appropriateness of their child’s class setting in meeting academic goals was important for most parents. On the questionnaire, this mother cites the high academic level of classes as key to her son achieving his academic goals, “My son was able to participate and excel in his AP and honors classes so he could pursue his college degree in engineering” (P80). Other parents noted the importance of class placement and academic goal attainment on

the questionnaire: “My child's placement is working with his talents and skills as well as working within his IEP guidelines. We have adjusted as his needs and educational plan have warranted” (P100) and, “Having been in general education classes and completed the program of studies to earn a standard diploma will allow her to enroll in college” (P104).

During interviews many parents discussed that the academic level of their children’s classes in high school would have a direct impact on their academic goal achievement. One parent of a daughter who struggles to get accommodations in advanced classes made the point that the kinds of colleges her daughter needs to attend require evidence of a rigorous class schedule:

It’s, we’re kind of at that critical junction. Like for instance, it’s, you know, what academic goals are realistic for her. I would like to think that with the right kind of support it should really be, except perhaps in the areas of hard Math, very few um...very few absolute limitations for her, you know.

I think intellectually, with growth and maturity and academic support she could probably reach the highest levels of her academic interests in Science, Writing and Literature and just about anything she chose. Is [daughter] ever going to be a good business manager? Not probably. Could [daughter] be amazing researchers or Scientist or policy wonk or literary fiction writer? I think so, you know? Certainly we should open every possibility to that. Um so...so then you look at her current placement. So we’re talking about a very upper middle class set of options for the top two percent of the world here. But in terms of what

would be her best suited *map* to those opportunities? You know probably an IB degree, certainly a rack up of honor's classes and AP classes and so forth. (P81)

The appropriate development of academic and social skills for meeting

academic goals. The other overarching theme focused on the appropriate development of academic and social skills in meeting academic goals. A parent answering the questionnaire said this about her son's preparation for college, "We have realized since he has gone to college some of the deficiencies of his high school. They did not prepare him for college" (P103). Another parent whose child was served in a self-contained setting and received intensive remediation as the result of a mediation settlement responded:

Early education was severely lacking. So it was very difficult for him to reach academic goals. Even with an hour and a half each day of one on one with a Speech & Lang[uage] reading specialist he never got caught up with peers. (P23)

A majority of parents who were interviewed identified social skills development as an important factor in their child's academic goal attainment. This mother has no concerns regarding her son's ability to achieve academically in college but is worried that the lack of social skills support's he's received in high school will negatively impact his ability to function academically in college:

If I have a wish for any parent, with a child with high-functioning autism it would be more help on the pragmatic side, they are just like I have heard of...I think it was UCLA, they had developed a whole curriculum, I can't remember what the name of it was, and I remember reading about it, and I think how excited I would

be to have that for my son in a school and I know there are different curriculums, and I just think it's function...the speech therapists don't have time and if they do have the time, pragmatics takes forever to work on and sometimes they don't work long enough with the child, to know what they need to focus with them.... College is fraught with...it's almost just a social experience as it is an academic experience. So [son] would...his plan is to go to [University] to be a freshman there and to live on campus but I can't imagine how he is going to do that. I mean that's hard enough for a typical freshman to move away from home and.... (P27)

Another parent worried that her son would have no problems intellectually accessing college classes but his enrollment in a self-contained program that does not provide social skills support in general education environments will impact his ability to function in a nonsupported environment:

Academically? In the environment he's in, he does fine. There is no way that academic environment is going to continue into college and so when he get...as soon as the [college] comes there's going to be an educational flip, because he's not going to have an isolated, special education trailer at community college. (P55)

Academic Placement and Career Goal Attainment

An investigation of how academic placement affects career goal attainment was conducted through an analysis of the responses to the open-ended questions from the questionnaire and a thematic analysis of the interview data. Themes from the questionnaire data are identified and identification of themes that emerged from the

interview data are enumerated. A synthesis of questionnaire and interview data will identify overarching themes.

Qualitative data from questionnaires. Qualitative responses obtained from the questionnaire regarding academic placement and its affect on career goal (Q50) attainment were coded, sorted, analyzed, and categorized into categories. This question was used to expand on a Likert scale questions (Q49) about whether the participant's child's academic placement will help their child attain their career goals. Thirty-one participants (100%) answered the Likert scale question (Q49) regarding parental opinion about academic placement and its affect on their children's career goal attainment. Thirty participants (97%) provided a more in-depth response and answered the open-ended question (Q50) about academic placement and its affect on their children's career goal attainment; one participant (P40) did not answer the open-ended question. An analysis of the data revealed three themes: classes, programs, or supports are not offered or are inappropriate for meeting career goals; appropriately challenging classes, teachers, or curriculum has prepared student to meet career goals; and special program or assistance has prepared student to meet career goals. The themes are enumerated and the participants associated with each theme are shown in Table 15.

Table 15

Questionnaire Theme Summary for Career Goal Attainment by Participant, Frequency of Theme, and Percentage of Participants with Identified Theme

Theme	Participant	Frequency of theme among participants	Percentage of participants with identified theme
Classes, programs, or supports are not offered or are inappropriate for meeting career goals	22, 23, 27, 37, 41, 44, 45, 46, 52, 55, 81, 91, 93, 102, 103, 111	16/30	53%
Appropriately challenging classes, teachers, or curriculum has prepared student to meet career goals	4, 27, 51, 57, 79, 80, 98, 100, 101, 104	10/30	33%
Special program or assistance has prepared student to meet career goals	4, 92, 95, 109	4/30	13%

Qualitative data from interviews. There were four themes identified that address how academic placement affected career goal attainment under the area of career goal attainment. They were: social skills critical to career goal achievement, lack of remediation in basic skills will affect career goal attainment, must access college to meet career goals, and diploma status will affect career goal attainment. The themes are enumerated in Table 16.

Table 16

Interview Theme Summary of Career Goal Attainment by Participant, Frequency of Theme, and Percentage of Participants with Identified Theme

Theme	Participant	Frequency of theme among participants	Percentage of participants with identified theme
Social skills critical to career goal attainment	4, 13, 23, 27, 44, 51, 52, 55, 81	8/11	73%
Lack of remediation in basic skills will affect career goal attainment	23, 45, 51, 52, 81	5/11	45%
Must access college to meet career goals	23, 44, 51, 81	4/11	36%
Diploma status will affect career goal attainment	23, 52	2/11	18%

Overarching themes. There were two overarching themes resulting from the synthesis of the thematic analysis of the questionnaire and interview data. The two overarching themes identifying how academic setting affects career goal attainment were: acquiring specific academic and social skills are critical to career goal attainment, and accessing an appropriate academic or job program is important to career goal attainment.

Acquiring specific academic and social skills are critical to career goal attainment. The questionnaire responses revealed several parents who felt the academic and social skills their children were learning were directly affecting their career skill attainment:

My son's classes challenge his intellectual abilities appropriately and help him learn the skills of self-regulation, such as completing work on time, organizing work, and collaborating with others. He has been able to participate in computer skills classes and creative writing classes, both of which are helping him move toward his career goal of being a video game designer. (P98)

Another parent also referred to skills her daughter was learning as a positive indicator that her daughter would attain her career goals, "some specific classes that she took (e.g., animal science, child development) helped her develop knowledge and skills in areas of possible future career interest" (P104).

During the interviews parents discussed social skill attainment as being important for career goal attainment. Several parents worried about their children's lack of social skills when trying to attain their career goals. This mother of a student who was in honors classes pointed out that even though her son was very functional academically he would have trouble keeping a job, "Yes, absolutely, because you cannot function in a normal...work environment, without those social skills, you will be fired. You will not succeed" (P27). A parent of a daughter who accesses honors and advanced classes discusses her worries about how her daughter will function in a career with her social skills deficits and how the school has been unable to respond to her daughter's needs for a social skills class:

Well frankly she better be in academia because there's no profession that will tolerate her quirkiness. So that's really like whatever we say I know at least if I go that route she has more of a shot of surviving. Where smarts can out balance your

weirdness. Which is why, all we can go with, is try to go with the fact that she's smart and go the quirky route. Because I don't know that...I don't know that personally as hard as I tried and all the things I've tried to find for her if we will get her there. But God knows the school has done nothing, nothing. We've tried. We've taken her to the skills classes, and the *this* and the *that*, and the *whatever*, but the school hasn't given her anything to deal with real-world requirements for the average career. (P81)

One participant discussed her concern that her son is not learning appropriate social skills in a self-contained environment and she worries he will fail if he does not get social skills practice in a general education environment with support:

Um...this is going to slow him down because he doesn't have any experience with this real world stuff and taking care of himself and he's not going to have a special education teacher shadowing him at a job.... You know at least he gets the time to practice being in the real world both for when he wants to continue with academics or just be prepared to take a real life job. You know and be able to function at a job without being constantly fired or not find himself un-hirable because of past performance. (P55)

As well, the lack of academic skills will hinder some participant's children in attaining their career goals. When asked about the career goal of engineering on her son's IEP, this mother felt that her son would not be able to achieve that goal, "I don't even see that one because I know for engineering, you need math, and he's failing math" (P51).

One participant talked about her son's inability to get a certificate in a computer program

at their local community college because he does not have the skills to pass the math and English entrance exam. Her son takes one class at a time and gets a “B”:

But he’s not really taking academic classes. Like, he can’t pass the math and the English. He can’t pass them to take a regular course load. So he’s taking computer classes and one social...he’s very interested in social studies and history. He watches the History Channel. Those are the classes he’s taken so far. In order to move on in the curriculum he will need to either pass or take the remedial math and the remedial English classes. (P23)

Accessing an appropriate academic or job program is important to career goal attainment. Parents who answered the questionnaire responded frequently that accessing appropriate academic and job programs were important to career goal attainment. A parent of a student in a general education setting described some school-sponsored special events that assisted her son:

The school actually hosted several events tailored towards special needs students. These events specifically addressed the services available to these students in High School and Colleges (although not all colleges offered the same services). They also provided valuable information to assist with the transition from High School to college. (P109)

The parent of a student in a self-contained setting identified a special program as an assist in attaining career goals, “Work Awareness Training (WAT) prepared him the most for work experiences” (P92).

Interviews revealed the importance of placement in academic programs that will support their children's career goals. One parent discussed the importance of a performing arts program her daughter is enrolled in. Her daughter's goal is to go to college and study performing arts so she can have a performing career:

She wants to go to [well known] University for musical theater with [well-known program], that's her dream, so I'm telling her that I just can't get her, to get her performance to match her dream. Like she's not going to be able to go, she will be able to eventually go, but not right after high school. She'll have to go to her dream...college and you know, then she's got to transfer [to a career]. And I mean some people do make it big right out of the high school and they don't have to go [to college], but we want to be prepared in case you do have to go [to college]. She's really talented; she could be one of those people. (P44)

Another participant who has a son in a self-contained educational setting recounted his son's struggle to find a technology program through the schools that would teach his son. His son cannot comprehend written manuals but can learn by observing and doing:

Because that's where we're more or less got turned down with at the [county] Tech Center because his comprehension of manuals is...he can't read a book on how to fix something, how to do something. He can't. He can read but not really understand it. So he wouldn't be able to go to a trade school. Now if he goes to an environment where somebody is willing to teach him then he's certainly

teachable, he could be taught to wire a circuit or to build a house, he can be taught to do that. (P45)

Comparison of Student Profiles

In addition to qualitative analyses of data from questionnaires and interviews, three student profiles were created to provide a maximal variation sampling of the participants in the study. This profile comparison is used to compare three divergent cases to explore similarities. The profiles are reviewed and the data examined here are a result of a thematic analysis of questionnaire and interview data, and an examination of documentation.

Student Profiles

The student profiles are identified as 1, 2, and 3. Profile 1 is participant 13, profile two is participant 27, and profile 3 is participant 55. All data reported here was verified by IEPs and other documentation.

Profile 1. Participant 13 is a mother whose daughter has a diagnosis of autism. Her daughter was 18 years old at the time of the interview. After her first year in a general education setting at her neighborhood high school, her daughter was placed in a self-contained program for students with physical disabilities. Two other self-contained placements were rejected before the final placement was made. Participant 13's answer to question 59, "Please let us know anything else you want to tell us about your child's experiences accessing the least restrictive academic environment in high school" was:

My child was initially forced to attend her base high school. After a long, difficult, and unsuccessful year, we were finally able to have her placed in an

appropriate setting. I hate the “base school only” attitude. I say all of my answers both as a parent of a special needs child and as an educator of special needs students.

Participant 13 describes her daughter’s academic skills as substantially below her nondisabled peers in math, social skills, executive functioning, working memory, processing speed, functional skills, emotional maturity and eye/hand coordination. Her daughter’s verbal, reading/comprehension, and writing/composition skills were described as somewhat below her nondisabled peers. However, her mother describes her child’s reading-decoding skills as about the same as her nondisabled peers. These impressions were supported by the IEP. Reading is a relative strength. Her daughter is on grade level for reading and she passed state mandated end-of-course tests in language arts in middle school and science in high school. According to the IEPs provided by her mother math skills are at the 4.5 grade level.

This profile represents the only participant who wanted her daughter to be placed in a self-contained environment following a general education placement. The participant reports that her daughter’s services were cut after middle school and she was never given the support she needed in high school and that was mandated in her IEP. This resulted in her daughter getting lost after getting off the bus and wandering the halls of the school looking for her classes. Participant 13 describes the incident that led to the decision that her daughter would be best served in a self-contained academic environment:

Well, anyway they decided that the way to help with this fingernail picking thing was...um...that she could wear gloves. If it wouldn’t stop and they could, they

would, put gloves...have her wear gloves. So it was okay let me know...we can try that. So, like the next day, [LAUGHS UNCOMFORTALBY] I get this lengthy email all about what happened at school and she was picking her fingers in class, and she wouldn't stop, and they brought gloves for her to wear and she refused to put them on and, this is her biology class, which is of all her classes was much more of the...“in the big world” and with her typical peers kind of class. And a bigger class than any of her others, and so then they had to remove her from the class...I guess...she got up and left the class but it was a lot to get her to do that so...I'm envisioning quite a scene because I know what it's like to get her to do stuff that she doesn't want to do. And so then she went to this other room still was refusing to wear the gloves...oh before she got there she was refusing to go down the hall to the department chair's office, I think is where they were trying to get her to go, so she like sat down on the floor and was just refusing to move so they told her they were going to call the security guard. And I was like, then, reading all of this...and so finally she did get up and leave. She went to this office and so then.... I read this I was still at work when I read this whole email and I went home and sitting on my kitchen counter top...the gloves were this bright blue...*bright*. And these were the gloves they were trying to get her to wear, and I was thinking these *clear* gloves...and no they were this *bright blue*...these were the gloves. They were *very* conspicuous. And I said “No wonder. No wonder she wouldn't do that,” the *only* kid. Like what are you guys thinking...so then...that was where...I finally said, “OK, we're done.” I was like,

“Clearly this is not working, we need to find a better placement for her. I think we can all agree, this is not successful. And so what is the better placement? I don’t know high schools so you guys tell me.” The school where she was, was an ED [emotionally disturbed] center, and I said you know that’s not her. She’s not ED, she won’t, that’s not the right place for her....

In her answers to the question about LRE on the questionnaire participant 13 feels her daughter had about the same access as her typical, nondisabled peers for general education classes (Q35) and her daughter was included in academic environments with her nondisabled peers “to the maximum extent appropriate” substantially more than was appropriate (Q46).

Profile 2. Participant 27 is the mother of a son who at the time of the interview was 17 years old. His autism diagnosis is PDD-NOS and he has always been in a general education setting. He did not know of his diagnosis of PDD-NOS until he was 16 and he has an accommodation on his IEP for extended time that he does not use; he has services for a resource class/study hall to help him complete work and speech to support articulation. His mother reports he has not had speech services “for months” despite the fact that it is still on his IEP as a service. Participant 27’s answer to question 59, “Please let us know anything else you want to tell us about your child’s experiences accessing the least restrictive academic environment in high school” was:

As I stated before, my son would benefit from more emphasis in how to socialize with his peers. This has not been addressed well throughout his time in school and

yet it is his biggest deficit and will certainly affect his ability to learn in college and work.

Participant 27 describes her son's academic skills as somewhat above his nondisabled peers in reading/decoding, math, executive functioning, and working memory. About the same as his nondisabled peers in verbal skills, reading/comprehension, writing/composition, processing speed, functional skills, and eye/hand coordination and somewhat below his nondisabled peers in emotional maturity. He is described as substantially below his nondisabled peers in social skills.

This profile represents the only participant who reports that her son does not use his IEP accommodations. Her son is in honors classes and takes an AP chemistry class. However, a concern about stress was reported:

His anxiety level has definitely gone up this year...I don't know if it is because [of AP], what... it might be because of the transition going from high school to college but we are not really sure what, but he has been having like abdominal issues in the morning, like stress and he has to take the...they were taking the bus, I have a younger son who is a sophomore and they would take the bus from where we live at [neighborhood], it's a really long drive, it's like a 25-minute bus ride. And [son] always had kind of an issue with it because he was worried, he had to go to the bathroom and he was on a bus he couldn't go, he was like stuck, and when he had kind of an episode of diarrhea it just really all blew up at that point and so I have been driving them in the morning just to alleviate that anxiety for [son] because there was a week where he would get to school and he would feel

nauseous, like the first period at school he would feel sick, physically sick, and so you know I tried to work it out with his teachers where we would alleviate that with him, if he had to leave the class he could leave, he could go see the counselor. Seems to have gotten better but he still has those issues. So anxiety has become an issue more so this year.

In her answers to the questions about LRE on the questionnaire, participant 27 felt that her son had about the same opportunity as his typical, nondisabled peers accessing general education settings (Q35) and that his inclusion was appropriate in accessing academic environments with his nondisabled peers “to the maximum extent appropriate” (Q46).

Profile 3. Participant 55 has a son with a diagnosis of Asperger syndrome, he was 16 years old at the time of that interview. Her son is the only participant who is in a self-contained academic setting and has an IQ well above average. Her son has passed several state end-of-course tests with perfect scores. Concerns about her son’s physical safety and a lack of trained personnel to support him in a general education setting were considerations in his self-contained placement. Participant 55’s answer to question 59, “Please let us know anything else you want to tell us about your child’s experiences accessing the least restrictive academic environment in high school” was:

He has been labled [sic] ED because the “experts” in the county fail to see that every child on the spectrum is not the same and they were rewarding his bad behavior and making it worse in the Autism classes by expelling him and sending him home to dad...he has years of bad behavior to undo...and now he has NO

access to mainstream classes or electives or honors classes (he is VERY smart... almost too smart... because no street smart/common sense to go with it).

Participant 55 describes her son's academic skills as somewhat above his nondisabled peers in verbal skills, reading/decoding, reading/comprehension, and math; somewhat below his nondisabled peers in social skills, executive functioning, working memory, processing speed, and functional skills; and substantially below his nondisabled peers in writing/composition, emotional maturity, and eye/hand coordination.

In her answers to the questions about LRE on the questionnaire participant 55 felt that her son had substantially less access than his nondisabled peers to access general education classes (Q35) and that his inclusion in academic environments with his nondisabled peers "to the maximum extent appropriate" was substantially less than was appropriate (Q46).

Identifying Factors That Facilitate Access to LRE or Create Barriers to LRE

A critical consideration for the analysis of these questions was how to frame LRE for each profile. Whether or not the participant's child had access to LRE was determined by their answers to the questions on the survey regarding whether they felt their child had the same access as their typical, nondisabled peers for general education classes (Q35) and whether their child was included in academic environments with their nondisabled peers "to the maximum extent appropriate" (Q46). In summary, the analysis of the two questions was within the context that participant 13 felt her daughter's access to LRE was the same as her nondisabled peers and that her daughter was included in general education environments substantially more than was appropriate. Participant 27 felt her

son had the same opportunities as nondisabled students to access LRE and that his inclusion in general education environments was appropriate. Participant 55 felt her son had substantially less access to LRE than his nondisabled peers and his inclusion in general education environments was substantially less than was appropriate.

The profile comparison regarding access to LRE is organized around two research questions (Stake, 2006) for this section.

1. What are the factors that facilitate access to LRE for students with HFA
2. What are the factors that create barriers to LRE for students with HFA \

Factors in creating barriers to LRE. Four factors were identified for the research question “What are the factors that create barriers to LRE?”: preconceptions of student, teacher training and education in HFA, parent fears, and no available services. The lowest factor was that there were no available services in general education environments, creating barriers to LRE. Although this may seem contradictory to the findings in facilitating factors to LRE above, because available services were high for the self-contained students, student 13 and 55, and moderate for student 27 in supporting access to LRE. This finding of low importance reflects the fact that student 13 had substantial services provided in her desired self-contained environment, whereas student 55’s desired placement was in general education and services were not available in that placement.

The factor with the highest importance for creating barriers to LRE was the preconception of the student. Participant 13 discusses that her daughter was put into a general education environment based on her test scores in language arts that did not

reflect her overall functioning whereas participant 55 discusses the idea that her son’s placement in a program for students with emotional and behavioral disabilities has created an unfair characterization of his ability to access a general education environment. Participant 27 talked about how the test scores of her son immediately enabled him access to honors classes without an IEP meeting because the counselor assumed he would be able to access the general education setting.

Another factor of high importance to participant 55 was parent fears; her fear was that staff who were not trained to support her son appropriately were not located in general education settings. This was of moderate importance for participant 13, as she felt more comfortable now that her daughter was in a self-contained environment. Parent fears were of low importance for profile 2 although she worried about her son’s stress. A summary of these findings is found in Table 17.

Table 17

Significance of Factors in Creating Barriers to Least Restrictive Environment

Factor	Profile 1	Profile 2	Profile 3
Preconceptions of student	H	L	H
Teacher training and education in HFA	H	L	H
Parent fears	M	L	H
No available services	L	L	H

Note. H = high importance, M = moderate importance, L = low importance.

Factors in facilitating access to LRE. The results of the analysis identified four factors for the research question, “What are the factors that facilitate access to LRE”: ability of the school to support student needs, available services, flexibility of teachers,

and teacher training and education in HFA. Factors that facilitate access to LRE had higher importance among the three profiles than did the barriers to LRE. The strongest factor was found in the ability of the school to support student needs in facilitating access to LRE. This was the only factor that was of high importance across all three profiles. All parents discussed the importance of support their children needed in a school environment. Although profile 2 did not need accommodations in the classroom he used the support of the resource room to finish classwork and keep up with his assignments.

Available services had high importance among the students who were in self-contained environments. It is the reason student 13 was in a self-contained setting and the reason student 55 cannot access a general education setting. Flexibility of teachers had high importance for student 13, the parent who requested a move to a self-contained environment, but not for the student whose parent did not want him in a self-contained environment, participant 55. Those factors were of moderate importance for the student who accessed a general education environment, profile 2, because he did utilize those supports but not extensively.

Teacher training and education in HFA was of high importance for both students in self-contained environments, profiles 1 and 3, but of low importance for the student in a general education environment, profile 2. Student 27 had a teacher who knew of his autism diagnosis but only provided support for that on rare occasions. A summary of these findings is found in Table 18.

Table 18

Significance of Factors in Facilitating Access to Least Restrictive Environment

Factor	Profile 1	Profile 2	Profile 3
Ability of school to support student needs	H	H	H
Available services	H	M	H
Flexibility of teachers	H	M	M
Teacher training and education in HFA	H	L	H

Note. H = high importance, M = moderate importance, L = low importance.

Factors of Academic Setting That Affect Academic and Career Goal Attainment

The quintain for this student profile comparison is, academic and career goal attainment for high school students with HFA. The student profile comparison regarding how the student’s academic placement impacts his or her academic and career goal attainment is organized around two research questions:

1. How has the student’s academic placement affected their academic goal attainment?
2. How has the student’s academic placement affected their career goal attainment?

How academic placement affects academic goal attainment. The results of the student profile identified two factors for the research question, “How has the student’s academic placement affected their academic goal attainment”: social skills development in educational environments and job training services. The factor that had the highest importance in how academic placement affected academic goal attainment was social skills development in the educational environment. This factor had moderate importance to Profile 1 and high importance for Profiles 2 and 3. The second factor, academic rigor

of program, had low importance to Profile 1 and high importance to profiles 2 and 3, see Table 19.

Table 19

Significance of Factors in Academic Placement Impacting Academic Goal Attainment

Factor	Profile 1	Profile 2	Profile 3
Social skills development in educational environment	M	H	H
Academic rigor of program	L	H	H

Note. H = high importance, M = moderate importance, L = low importance.

Profile 1. Participant 13 stated that her daughter’s academic placement would neither limit nor advance her academic goal attainment (Q47). Her answer to the open-ended question about why she felt her daughter’s academic placement would either help or hinder her academic goal attainment was, “My child requires significant support to be successful. GenEd classes are inappropriate for her and are not her least restrictive environment.” She rated her daughter as substantially below her nondisabled peers in social skills (Q19). Social skills development in the educational environment was of moderate importance to this profile.

The analysis of Profile 1 revealed the complex influence of a lack of social skills support and its effect on participant 13’s daughter’s academic placements. Her academic functioning within the general education setting was adequate to graduate high school; however, a lack of support, to include social skills support, created an environment where she could not function academically. Her parent’s decision to pursue a self-contained environment preempted a consideration of academic goals because she is pursuing career

skills in supported employment in her current self-contained academic environment. Ironically, she does receive social skills support in this environment; however, the emphasis is not on academic goals but on career goals. When asked if she thought her daughter would have any future academic goals for a trade school or a certificate program she answered, "I'm not sure."

The second factor, academic rigor of program, was found to be of low importance in this profile. Although participant 13's daughter was on grade level in many subject areas the emphasis on career goals deterred any thoughtful consideration about future academic programs or goals her daughter might have.

Profile 2. In answering the Likert scale question (Q47) regarding to what extent participant 27 felt her son's academic placement would allow him to meet his future academic goals she responded that his academic placement would substantially advance his academic goal attainment. For the open-ended question (Q48) regarding academic placement and academic goal attainment participant 27 stated, "AP and honor classes were offered as well as study hall time available to meet the needs of those classes." This parent described her son's social skills development as substantially below his nondisabled peers (Q19). Social skills development in the educational environment was of high importance to this profile.

The analysis of profile 2 revealed that the lack of social skills development in her son's educational environment is his parent's primary concern. Although his academic functioning is excellent his mother has deep concerns that once he graduates high school he will not be able to succeed in college due to a lack of social skill development. She

discussed how having a social skills class with a developed curriculum for high-functioning students was something she wished the school would provide.

The academic rigor of participant 27's son's academic placement was of high importance in her son's academic goal attainment. She discussed in her interview that the level of classes has forced her son to set the bar high for academic achievement and create his own organization strategies to "stack assignments." She believes these skills will be helpful for his functioning in college.

Profile 3. Participant 55 stated that her son's academic placement would substantially limit his academic goal attainment (Q47). Her answer to the open-ended question about why she felt her son's academic placement would either help or hinder his academic goal attainment was, "He has not learned social skills to work in groups, to change classes, to deal with different teachers, etc.... And takes no extracurricular (e.g. choice classes like chorus, band, home ec, etc.) classes to find his niche." She rated her son as somewhat below his nondisabled peers in social skills (Q19). Social skills development in the educational environment was of high importance to this profile.

The analysis of profile 3 revealed that a lack of social skills development in the educational environment will not only hinder participant 55's son's ability to attain his academic goals within high school, but will severely inhibit his participation in postsecondary academic environments. The self-contained nature of the academic environment participant 55 described for her son did not allow for any participation within a general education environment. Although her son passes end-of-course assessments easily, receives all As and Bs, and is used frequently as a peer tutor in math,

he has had no opportunity to experience other environments with social skills supports. This lack of experience in general education settings and social skills support will impact his ability to access college.

The academic rigor of participant 55's son's academic program was of high importance in this profile. She described his academic program as not as rigorous as she would like. Her son's scores on state-mandated end-of-course tests are often perfect and his grades are high. His mother felt that this was an indicator that he should be in a more challenging academic setting,

I don't think there's ever been a suggestion that [name] with his perfect SOL score in English might be in a regular ed class in English with some [social skills] assistance. That maybe he needs more stimulation. If he could get a perfect score on the SOL.

How the student's academic placement affects career goal attainment. Two factors were identified for the research question "How has the student's academic placement affected their career goal attainment": social skills development in educational environment and academic rigor of program. The factor that had the highest importance in how academic placement affected career goal attainment was social skills development in the educational environment. This factor was of high importance for all profiles. The second factor, job-training services, had high importance for both students in self-contained academic environments, profiles 1 and 3, and low importance to the student in the general education environment, profile 2 (see Table 20).

Table 20

Significance of Factors in Academic Placement Impacting Career Goal Attainment

Factor	Profile 1	Profile 2	Profile 3
Social skills development in educational environment	H	H	H
Job training services	H	L	H

Note. H = high importance, M = moderate importance, L = low importance.

Profile 1. Participant 13 stated that her daughter’s academic placement would somewhat advance her career goal attainment (Q49). Her answer to the open-ended question (Q50) about why she felt her daughter’s academic placement would either help or hinder her career goal attainment was, “My child needs classmates and an environment that will support her vocational needs and help her find a supportive work environment.” When discussing how she anticipated her daughter’s level of social skills will allow her function within a job environment participant 13 stated,

So, she can interact with neuro-typical peers but they have to be people who get that this is a person with disabilities so we have to be...she’s very immature so they have to get all that. She’s not going to go out and socialize after work with people from the office; it’s never going to happen for her.

Participant 13 discussed the social skills challenges her daughter has,

But if you met her, and everybody when they meet her are like, “Oh, she’s clearly a child with autism.” You know...the whole...no eye contact, poor social skills, she’s got high verbal skills but I don’t think that’s uncommon especially for girls....

Although requested, there was no social skills support in the general education environment her daughter was initially placed in. Participant 13 discusses what happened when they asked for social skills instruction for her daughter:

They did NOT want to do that and, you know just, you could tell that it wasn't... just doesn't work with the high school model, where it's, you know everybody's in different classes, everybody has a different schedule, so how do you?...and I can understand that, I can see how that's difficult, because it's...because of the high school model. So that doesn't mean that you still don't need that....

She also described the social skills supports her daughter receives in her self-contained academic environment, "She's involved with a monthly girls group...it's a social skills kind of class. Not a class, I don't know how they meet, it's with a social worker there."

The factor of job training services was also of high importance for participant 13. In discussing her plans for her daughter's career goal attainment she recounts a visit to a jobs program:

Our goal for her right now is that she go to the [training] Center. It's part of [their] County public schools and their...whole thing is a job training program. And the kids work at different sites. And they work at a site, and whichever one that is, for the school year and they teach the kids. As part of that job training, they also work on personal finances, they have to have a checking account, learn how to write checks, and learn how to budget money. And...then, she, so it just depends on what job she gets placed in there. We don't know what for sure it'll be but it looks really good. We went and actually toured it on Wednesday, so it's nice. They

have jobs at places like the [large hotel chain] and they take groups of kids to the jobs, whatever it is they'll do there.

Profile 2. In answering the Likert scale question (Q49) regarding to what extent participant 27 felt her son's academic placement would allow him to meet his future career goals she responded that his academic placement would somewhat advance his career goal attainment. This showed less advancement of her son's career goals due to academic placement than for academic goal attainment, which she said would substantially advance his academic goal attainment. The reason for this may be in her answer to the open-ended question (Q50) regarding academic placement and career goal attainment, "All placement in current courses are appropriate but I would like to see more emphasis on socialization—which has not happened." Participant 27 talked about her frustration with a lack of follow-up when discussing and implementing social skills supports with the staff:

I wish that they would talk about it with me, because they have always talked about how you need to do in the classroom but also generalize outside of class, so that I could help reinforce it more. "[Son], what did you guys work on today?" And "Oh! What do you think about that?" That hardly ever happens. I know they are overworked and under resourced and all that and sometimes honestly the IEP, because I have been through so many school systems, it almost just seems like a paperwork exercise. It really does.

When asked if a social skills group with typical peers would assist her son in generalizing social skills she stated,

That would be perfect. If it's one on one you can talk about it but you have to actually put it into practice which is...I would love for them to help him through an hour in the lunch room or....

When if she felt son's lack of social skills will negatively impact his career goals she said, "Yeah, I do, I do feel that strongly."

There was low importance for the second factor in academic placement affecting career goal attainment. When asked about postsecondary programs, to include job-training programs, participant 27 responded that her son's postsecondary career goals were only for college.

Profile 3. Participant 55 stated that her son's academic placement would substantially limit his career goal attainment (Q49). Her answer to the open-ended question about why she felt her son's academic placement would either help or hinder his career goal attainment was identical to her statement about academic goal attainment, "He has not learned social skills to work in groups, to change classes, to deal with different teachers, etc.... And takes no extracurricular (e.g. choice classes like chorus, band, home ec, etc.) classes to find his niche."

The analysis of profile 3 revealed that a lack of social skills development in the educational environment would substantially impact participant 55's son's career goals attainment. She discussed how his current self-contained setting with no social skill supports to access a general education environment would hinder his career goal attainment:

Unless he's going to go directly into some sort of service that trains him, and trains the trainer, which there are a few around...they're hard to get into because of long waiting lists. Um...this is going to slow him down because he doesn't have any experience with this real world stuff and taking care of himself and he's not going to have a special education teacher shadowing him at a job.

The factor job training services was also of significant importance for participant 55. She described how she's trying to access job training for her son:

They have suggested the disability services people and at the time he wasn't old enough and we have to contact them now that he's past his 16th birthday and talk to them. But it's kind of a strange disjointed thing...um...the school doesn't do it. They hand you a piece of paper and say, "Here you should do it." And then the service interacts with the school.

Differences Across School Divisions in Parent Perception of LRE

Differences across school divisions were explored. There is evidence to suggest that differences in funding across the Commonwealth may impact the supports and services available enabling students to access more inclusive, or least restrictive, environments (Baker et al., 2010, 2012; Salmon, 2010). Descriptive statistics were examined to assess the means and standard deviations of the LRE variables (Q35, Q46) and the academic and career goal attainment variables (Q47, Q49) of each participant's school division. To maintain anonymity of participants each school division is given a code dividing it by location and size. The codes for location are urban (U), suburban (S), and rural (R). The number of students in the school division determined the size of the

school division and is indicated by small (S), medium (M), and large (L). The combined location code, size code, and the number of students in the school division identify the school division. The result of this summary is shown in Table 21.

Table 21

Descriptive Statistics for All Participants and School Division by Mean and Standard Deviation for LRE and Academic and Career Goal Attainment

School division and population	<i>N</i>	Same opportunity access LRE	Included maximum extent	Academic goal attainment	Career goal attainment
All Participants	31	2.23 (<i>SD</i> = 0.96)	2.58 (<i>SD</i> = 0.99)	3.00 (<i>SD</i> = 1.32)	2.97 (<i>SD</i> = 1.30)
S-M (13,680)	1	2.00	2.00	2.00	3.00
U-S (14,216)	2	1.50 (<i>SD</i> = 0.71)	2.50 (<i>SD</i> = 0.71)	2.50 (<i>SD</i> = 0.71)	2.00 (<i>SD</i> = 0)
U-M (24,559)	2	2.00 (<i>SD</i> = 0)	2.50 (<i>SD</i> = 0.71)	4.00 (<i>SD</i> = 0)	4.00 (<i>SD</i> = 0)
S-L (59,725)	3	1.33 (<i>SD</i> = 0.58)	1.33 (<i>SD</i> = 0.58)	1.33 (<i>SD</i> = 0.58)	1.33 (<i>SD</i> = 0.58)
S-L (185,538)	11	2.55 (<i>SD</i> = 1.13)	3.00 (<i>SD</i> = 1.00)	3.91 (<i>SD</i> = 1.30)	3.64 (<i>SD</i> = 1.21)
U-S (2,465)	1	2.00	2.00	1.00	2.00
S-M (11,165)	1	3.00	5.00	4.00	5.00
S-L (50,971)	2	3.50 (<i>SD</i> = 0.71)	2.00 (<i>SD</i> = 0)	2.50 (<i>SD</i> = 2.12)	3.00 (<i>SD</i> = 2.83)
R-S (3,027)	1	1.00	2.00	2.00	2.00
U-M (29,547)	1	2.00	2.00	3.00	3.00
R-S (11,867)	1	3.00	3.00	3.00	3.00
R-M (23,887)	1	2.00	1.00	2.00	1.00
S-M (27,573)	3	1.67 (<i>SD</i> = 0.58)	3.00 (<i>SD</i> = 0)	2.67 (<i>SD</i> = 0.58)	2.67 (<i>SD</i> = 0.58)
R-S (1,700)	1	3.00	3.00	3.00	3.00

Note. School division codes are: urban (U), suburban (S), and rural (R) for location, and small (S), medium (M), and large (L) for size of school division.

The mean for all participants for the four variables (Q35, Q46, Q47, Q49) measuring parent perceptions of LRE and the impacts academic placements have on academic and career goal attainment were compared to the school division means of the four variables. School divisions were sorted into three groups, the first representing performance across variables below the mean, the second representing performance across variables above the mean, and the third group showed mixed performance across variables. The means and standard deviations for all participants ($N = 31$) for the LRE and academic and career goal attainment variables are: the same opportunity to access LRE as typical, nondisabled peers (Q35) 2.23 ($SD = 0.96$), included with peers to the maximum extent appropriate (Q46) 2.58 ($SD = 0.99$), academic goal attainment (Q47) 3.00 ($SD = 1.32$), and career goal attainment (Q49) 2.97 ($SD = 1.30$). The six school divisions that fell below the mean on all variables are: S-M (13,680), U-S (14,216), S-L (59,725), U-S (2,465), R-S (3027), and R-M (23,887). The four school divisions that were above the mean on the variables are S-L (185,538), S-M (11,165), R-S (11,867), and R-S (1,700). Four school divisions had mixed results when compared to the average of all school divisions: U-M (24,559), S-L (50,971), U-M (29,547), and S-M (27,573). U-M (24,559) was below the mean for both LRE variables but above for both goal attainment variables, as was U-M (29,547). S-L (50,971) was above the mean for the same opportunity to access LRE as typical, nondisabled peers (Q35) and career goal attainment (Q49) but below the mean for accessing LRE to the maximum extent appropriate (Q46) and career goal attainment (Q49). S-M (27,573) was above the mean

for included with peers to the maximum extent appropriate (Q46) but below the mean for the three remaining variables.

Differences Across Academic Settings and Parent-Perceived LRE

The differences across academic settings included parent perception of one LRE variable. The variable that measured parent perception of whether their child had the same opportunity to access LRE as their nondisabled peers (Q35) differed by a point on the Likert scale between the parent group whose children were in general education settings and the parent group whose children were in self-contained settings. Parents of students in a general education setting felt their child had somewhat less access to LRE than their typical, nondisabled peers whereas parents whose children were in self-contained settings felt on average that their children had substantially less access to LRE than their typical, nondisabled peers.

The analysis of the interviews also revealed differences. One category, parent fears about staff and/or students within an academic environment affect LRE, was found only among parents whose children were in self-contained academic settings.

The questionnaire asked parents whose children were enrolled in an advanced class, an Advanced Placement class, an International Baccalaureate class, or an enriched educational experience if their child had an IEP with accommodations that needed to be followed (Q37). All parents whose children were enrolled in advanced placements ($n = 11$) responded that their child had accommodations that needed to be followed. Of the parents reporting whether their child was receiving their IEP accommodations in those placements three (27%) responded yes, five responded sometimes (46%), and three

(27%) responded no. As well, the thematic analysis of the questionnaire data revealed that four parents identified a lack of accommodations in advanced classes as barriers to LRE. One parent stated on the questionnaire: “Teachers often seem irritated by IEP provisions—for example, ‘this is a college level class and it is not appropriate to provide that kind of assistance’” (P57).

This parent describes the attitudes of some teachers regarding providing accommodations to her daughter in advanced classes:

She faces much greater hostility and humiliation by teachers in honors classes, who at times have acted in ways that are cruel to call out her disability or made snide remarks about her accommodations. I have had instructors in these advanced classes flat out tell me that she had no business being in their class if she wasn’t “up” to the challenge and have to confront them vigilantly to ensure that even the most basic accommodations were followed. One English instructor told me she should not be in the class because she was too rigid, that she could not effectively participate in class discussions and made her peers uncomfortable. They completely lack any understanding of ASD as a disability as opposed to a character defect. (P81)

CHAPTER FIVE

The purpose of this study was to explore, through parental report, access to the least restrictive environment (LRE) for high school students with high-functioning autism (HFA), how access to LRE affects academic and career goal attainment, and how students with HFA are experiencing the LRE provision of the IDEA across the Commonwealth of Virginia. This study uses an explanatory sequential mixed-methods design. This design allows for triangulation of data collection to include a questionnaire, in depth interviews, and information from a variety of documents and artifacts. As well, the design provides for a triangulation of multiple methods for synthesizing the data: an examination of Likert scale responses on a questionnaire, a thematic analysis of questionnaire and interview data, and a comparison of three discrepant student profiles.

There are four research questions addressed in this study:

1. What are the relationships between the academic profile of students with HFA and their parent-perceived LRE?
2. Does parental perception of access to LRE relate to students' academic and career goal attainment?
3. What are the factors that facilitate access to LRE, or create barriers to LRE, for students with HFA, as reported by their parents?

4. How has the students' academic placement affected their academic and career goal attainment, as reported by their parents?

This chapter summarizes and discusses the key findings in relation to prior research and policy frameworks, implications for policy, implications for practice, implications for future research, and limitations of the study will be explained. Each research question is discussed and compared to the findings in this study. A heading corresponding to the each research question identifies the discussion for the research question.

The findings of the study are then compared to the *Models of Best Practice in the Education of Students with Autism Spectrum Disorders* (VDOE, Office of Special Education and Student Services, 2011) published by the commonwealth of Virginia. Following this discussion two conceptual frameworks are used to examine why there may be a misalignment between what is outlined as best practice for students with autism in Virginia and what students are experiencing. Policy implications are discussed and steps to improve practices regarding LRE and inclusion for students with HFA, at the state and local level, are outlined. Finally, implications for research and limitations of the study are discussed.

Major Findings

The nine major findings in this study were:

- The mean score for all parents may suggest parents felt their children had less inclusion than was appropriate when compared to the inclusion of nondisabled peers;

- The mean score for all parents may indicate parents felt their children had social skills, executive functioning, and emotional maturity that were substantially below nondisabled peers;
- Statistically significant positive correlations were found between parental perception of whether their child had the same opportunity to access LRE as nondisabled peers and good academic skills in reading comprehension ($r_s(29) = .416, p = .02$), reading/decoding ($r_s(29) = .406, p = .023$), and math ($r_s(29) = .363, p = .045$);
- Statistically significant positive correlations were found between parental perception of whether their child was included in academic environments “to the maximum extent appropriate” and good academic skills in working memory ($r_s(29) = .464, p = .009$) and processing speed ($r_s(29) = .415, p = .020$);
- Statistically significant positive correlations were found between parental perceptions of whether their child was included in academic environments “to the maximum extent appropriate” and their feelings about their children’s career ($r_s(29) = .631, p < .01$) and academic ($r_s(29) = .612, p < .01$) goal attainment;
- Statistically significant positive correlations were found between parental perceptions of whether their child had the same opportunity to access LRE as their nondisabled peers and career ($r_s(29) = .575, p < .01$) and academic goal attainment ($r_s(29) = .475, p < .01$);

- A lack of knowledge of HFA by school staff may drive a lack of academic support and accommodation in educational settings, limiting LRE;
- Findings suggest that an appropriate academic environment to support the attainment of academic and career goals includes not only academic supports but social skills supports;
- There may be a misalignment between what is outlined by the Commonwealth of Virginia in their best practices for students with autism and what is experienced by students with HFA.

Discussion of the Relationships Between the Academic Profile of Students with HFA and Their Parent-Perceived LRE

In order to explore the relationship between student academic profiles and parent-perceived LRE, outlined in research question one, quantitative methods were employed. Descriptive statistics and nonparametric Spearman r_s correlation coefficients were calculated. For the total sample ($N = 31$) the mean scores from the questionnaire for academic skills showed parents viewed their children's verbal skills and reading/decoding skills "about the same" as their nondisabled peers. This is consistent with prior research (Kanai et al., 2012; Mayes & Calhoun, 2008; Siegel et al., 1996; Smith Myles & Simpson, 2002) regarding the verbal and reading/decoding strengths of individuals with HFA.

For the total sample the mean scores for academic skills showed parents viewed their children's social skills, emotional maturity, executive functioning, and processing speed as "substantially below" their nondisabled peers. This is consistent with prior

research regarding executive functioning and processing speed (Kanai et al., 2012; Mayes & Calhoun, 2008; Whitby & Mancil, 2009) and social skills and emotional maturity (Graetz & Spampinato, 2008; Madriaga, 2010; Sansosti & Sansosti, 2012; Smith Myles & Simpson, 2002). In this study these skills appeared weak for both students who access general education environments and students who access self-contained environments.

For the total sample the mean scores for academic skills showed parents viewed six academic skills as “somewhat below” their nondisabled peers: reading/comprehension, writing/composition, math, working memory, functional skills, and eye/hand coordination. As well, those results reflect the findings of prior research regarding deficits in reading/comprehension (Smith Myles & Simpson, 2002), writing/composition (Foley-Nicpon et al., 2012; Mayes & Calhoun, 2008; Smith Myles & Simpson, 2002), math (Foley-Nicpon et al., 2012; Smith Myles & Simpson, 2002), working memory (Assouline et al., 2012; Foley-Nicpon et al., 2012; Mayes & Calhoun, 2008; Smith Myles & Simpson, 2002), and eye/hand coordination (Mayes and Calhoun, 2008) for individuals with high-functioning autism.

Parents of students who are in self-contained settings had a mean score on almost all academic skills (Q14-Q19, Q21-25) that was lower for their children than parents whose children were in a general education setting. The academic skills that showed the largest difference on the Likert scale between students in self-contained settings and students in general education settings were: verbal, reading/decoding, reading/comprehension, and writing/composition. This may be expected considering that, in general, students in self-contained settings predictably may have weaker academic skills

than students who are in general education settings. Of greater interest may be the skills that showed smaller differences between the two student groups.

Academic skills that showed the least difference on the Likert scale between students in self-contained settings and students in general education settings were: social skills, executive functioning, functional skills, and emotional maturity. Students in self-contained settings had a higher mean score in executive functioning (Q20) than students in general education settings. The differences in executive functioning between the two groups of students may reflect the higher demands on executive functioning within a general education setting when compared to a self-contained setting. The larger emphasis on academics for students who are college bound may cause their parents to view these skills more critically as they are important to succeed in postsecondary academic environments.

As pointed out earlier, the differences in basic academic skills between the students in self-contained settings and students in general education settings may be attributable to lower ability. However, a history of self-contained settings based on preconceptions of ability that did not fully support academic growth may also be a factor. Jackson Brewin et al. (2008) and Starr and Foy (2012) found that children diagnosed with an autism spectrum disorder are often placed in academic settings based on preconceptions of their ability that reflect a lack of knowledge of autism by school staff. Two parents in this study, whose children were in self-contained settings for their entire school career, described academic placements in elementary school based on their children's autism diagnosis and not on their children's ability. This parent explains the

result of what she describes as academic neglect, “He got nothing in elementary school. I think that we’re building a house of cards, there’s nothing in it and you can’t keep building curriculum when there’s no foundation” (P23). This participant’s son is currently attending community college. Another parent describes the atmosphere of his child’s early academic placements, “So then he went back to another elementary... his old elementary school where there was an autism program. Basically it’s a dark room, they keep him quiet, and they don’t learn too much” (P45). This parent was able to teach his son multiplication tables when the school told him it could not be done. Another parent from the pilot study (Hayes-Harris, 2012) for this research talked about how her son’s elementary school’s vice-principal said her son would never get very far because he was “MR”; her son graduated from high school with honors earned in Advanced Placement classes.

It is interesting to note that there were very small differences in social skills, executive functioning, functional skills, and emotional maturity between the mean scores of the two groups. This finding points out the commonality of deficits associated with autism within the two groups of students who have very different abilities. It also points out the large discrepancy between higher academic skills when compared to lower-level skill deficits in executive functioning, maturity, and social skills among the higher ability students who are served in a general education setting. This gap between social, emotional skills, and academic skills by gifted students with HFA was discussed in studies by Assouline et al. (2012) and Bianco et al. (2009), who caution that basing

academic environments on student weaknesses unfairly limits academic growth and opportunities later in life.

The results of the academic profiles of the students in this study are reflective of the literature. An academic profile favoring verbal skills such as speech, vocabulary, and reading/decoding over performance skills such as executive functioning and processing speed is consistent with prior research. The strengths and weaknesses described in this study and in the literature of HFA may be an indicator that students with HFA share cognitive characteristics that are a feature of autism. The importance of this finding is in the way these cognitive features may be viewed and accommodated by schools. The deficits of social skills, executive functioning, and processing speed may be emerging as common features of high-functioning autism and as such should be accommodated as a part of a disability and not dismissed as “character defects” as one participant in this study stated.

The mean scores of parental perceptions of inclusion differed slightly between the parents of students in self-contained settings and parents of students served in a general education setting. When asked whether their children had the “same opportunity to access LRE as nondisabled peers” (Q35), parents of the students in self-contained settings felt their children had “substantially less opportunity” than their nondisabled peers whereas parents of students in general education settings felt their children had “somewhat less opportunity” than their nondisabled peers. However, when parents were asked if their child was included in academic programs as their nondisabled peers “*to the maximum extent appropriate,*” participants in both academic groups had very similar scores and felt

that their children had somewhat less inclusion than was appropriate. The differences between these two LRE questions regarding the same opportunity to access LRE as a nondisabled peer may lie in how the parents of these students experience access to general education settings. Parents of students who are served in general education environments see their children being served in the same setting with their typical peers whereas parents of self-contained students do not. The finding that both groups of parents view inclusion to the maximum extent appropriate in similar ways may be a more significant finding in that each parent is assessing LRE based on their child's individual experience and not by comparing inclusion to typical peers.

Statistically significant moderate positive correlations were found between parental perception of whether their child had the same opportunity to access LRE as nondisabled peers and good academic skills in reading comprehension, reading/decoding, and math. This may indicate that students with HFA who, in the view of their parents, are able to access the least restrictive environment equal to their nondisabled peers possess good academic skills in reading comprehension, reading/decoding, and math. There is research to suggest that good academic skills lead to better inclusion for students with HFA. Assouline et al. (2012) found a positive correlation between the reading and math achievement of students with HFA and participation in talented and gifted programs.

Statistically significant moderate positive correlations were found between parental perception of whether their child was included in academic environments "to the maximum extent appropriate" and perceptions of their child's academic skills, as compared to their nondisabled peers, in working memory and processing speed. This may

suggest that students with HFA who have good working memory and processing speed may be accessing least restrictive academic environments to the maximum extent appropriate. Conversely, this also suggests that parents of students who do not have good working memory and processing speed feel their children are not able to access academic environments “to the maximum extent appropriate.” This finding raises interesting questions about students with high cognitive ability and low working memory and processing speed. Many parents in this study described their children’s inability to access advanced placements, not based on their cognitive ability but based on skills such as processing speed, executive functioning, and working memory. The inability, or unwillingness, of teachers to support their children in these lower level skills was a large factor in parents’ perception that their children were not able to access LRE. This idea is supported by the findings in a study by Assouline et al. (2012) of gifted students with HFA. In that study, the exclusion of students with HFA in gifted programs was not based on their cognitive ability and higher level intellectual functioning but on their lack of working memory and processing speed. The researchers in that study suggest that entrance requirements for academic programs for gifted students take this into account when considering inclusion of students with HFA in these academic settings and programs.

Summary of Results and Discussion of Academic Placement and Academic and Career Goal Attainment

This summary of results and the discussion of LRE and academic and career goal attainment combines research questions two and four. The relationships between access

to LRE and academic and career goal attainment, and how the student's academic placement has affected their academic and career goal attainment, are interrelated and will be discussed together.

Summary of Results

Quantitative results from research question two are discussed first. Descriptive statistics are summarized and then the nonparametric correlation statistic results are summarized. The qualitative results from research question four include the questionnaire, the interviews, and summarizing the overarching themes found from a synthesis of the two data sources. Factors from the student profile comparison are also summarized. Following the summaries is the discussion synthesizing the results from quantitative and qualitative data sources for access to LRE and academic placement and their effects on academic and career goal attainment.

Summary of nonparametric correlation statistic results. Overall parental perceptions ($N = 31$) from the questionnaire of whether their child was included in academic environments "to the maximum extent appropriate" showed a statistically significant moderate positive correlation to their feelings about their children's career goal attainment. There was a statistically significant moderate positive correlation to parental feelings about their children's academic attainment and inclusion in academic environments "to the maximum extent appropriate" but it was slightly weaker than that for career goal attainment.

Statistically significant moderate positive correlations were also found between parental perceptions of whether their child had the same opportunity to access LRE as

their nondisabled peers and career goal attainment. Academic goal attainment also showed a moderate positive correlation to perceptions of LRE when compared to nondisabled peers, but again this relationship was weaker than for career goal attainment. Comparatively, the strongest relationship was between being included with peers to the maximum extent appropriate and career goal attainment; the weakest relationship was between opportunity to access LRE to the same extent as nondisabled peers and academic goal attainment.

Summary of descriptive statistics. Parents were asked on the questionnaire to what extent they felt their child's current class placements would allow them to meet their future career and academic goals. Mean scores indicated that parents of students in self-contained settings felt their children's LRE would "somewhat limit" their career goal attainment and parents of students in general education settings felt that their children's LRE would "neither limit nor advance" their career goal attainment. The results for academic goal attainment were the same.

Summary of qualitative results. For this section there is a summary of results for two open-ended questions on the questionnaire completed by participants ($N = 31$), an examination of data from the interviews ($n = 11$) and the overarching themes of these two data sources. As well, an analysis of student profiles using thematic and cross-case analysis techniques is addressed. The importance of overarching themes and factors across all research methods was considered for the discussion of the results.

Summary of questionnaire data. The thematic analysis of the questionnaire regarding academic placement and its affect on academic goal attainment was divided

among parents whose children were accessing general education settings and were focused on college, and parents whose children were accessing self-contained environments and were focused on the impacts of a lack of academic skill development over the years and how this would limit their child's access to postsecondary academic opportunities. Parents of students in a general education setting cited the level of classes or supports preparing the student for college (30%) and the need for accommodations to attain academic goals (13%). Parents with students in both academic settings identified skill deficits that will hinder academic goal attainment (23%) and the fact that their child cannot get needed classes or placements that would help them achieve academic goals (23%). Five parents reported that their child's academic setting is appropriate to attain academic goals (17%). It is clear that the parents of students in general education settings are primarily concerned that their child access college and that they feel the academic level of the classes in which their children are enrolled in high school, and the supports their children receive in those classes, are key to the realization of these academic goals. Some parents of students who are in self-contained settings have either ruled out, or deferred consideration of, postsecondary academic placements. Those students served in self-contained settings, who are accessing postsecondary academic settings, are limited by a lack of basic skills.

The thematic analysis of the questionnaire regarding academic placement and its affect on student's career goal attainment also showed a division between students served in self-contained settings and students served in general education settings. Parents of students in general education settings discussed their child's ability to access

appropriately challenging classes, teachers, or curriculum as an important preparation in meeting career goals (33%). Again, these parents are focusing on college as the route to career goals. Parents of students in general education settings and parents of students in self-contained settings both felt some classes, programs, or supports are not offered or are inappropriate for meeting career goals (53%). For parents whose children access general education settings the classes, programs, or supports that are not offered or are inappropriate focus on an inability to access higher level classes, to obtain the required IEP accommodations that their children should receive, or supports that were not suggested to assist their child. For parents whose children access self-contained settings there was a lack of an appropriate avenue to attain career goals; either the career goals set for their child by the school were not appropriate to their children's unique needs or their children were not prepared academically to attain their career goals.

Parents of students in general education settings and parents of students in self-contained settings both felt a special program or special assistance has prepared their child to meet career goals (13%). For students in the general education setting this involved a program to access college and for students in a self-contained setting this involved job placement services. As well, students in general education settings associate attainment of career goals with the ability to take classes that will prepare them for college, whereas some students in self-contained settings are focused on job skills programs as an avenue to their career goals. However, some parents of students who were served in a self-contained setting discuss how low expectations during their child's academic career have limited their career choices even in job training programs.

Summary of interview data. Analysis of the interview data revealed three categories related to academic placement and its affect on academic goal attainment. Common to both parents of students who access general education settings and parents of students who access self-contained settings is the importance of social skills to academic goal attainment (55%); five out of the six participants had children who were very high functioning academically and whose primary concern was social skills. The academic level of classes is key to academic goal attainment (45%) for both students in a general education setting and students in a self-contained setting. The parents of students served in a general education setting were concerned with access to an appropriately rigorous classroom environment and parents of students in the self-contained environment were concerned their child be in an appropriate setting to achieve academically. Parents of students in a self-contained environment talked about how academics were abandoned when career skills were chosen as an avenue for their child.

A thematic analysis of the interview data revealed four themes related to how academic placement impacts career goal attainment. Social skills are critical to career goal attainment for 76% of parents. Most parents of students served in general education settings discussed their children's quirky personality, impaired ability to relate or communicate with others, or lack of survival skills such as driving or living alone. Parents of students in self-contained settings discussed social supports that would be needed in a workplace so that their child could function in a work environment, such as setting clear social parameters and training someone to work with their child's social impairments. Forty-five percent of parents of students served in self-contained and

general education settings cited a lack of remediation in basic skills that will affect career goal attainment. As well, parents of students served in self-contained and general education settings stated that their children must access college to meet career goals (36%). Some parents of students in self-contained environments discussed their children's need to obtain certificates at a community college in order to attain their career goal. The fact that their children will not obtain a standard diploma was a factor in career goal attainment for 18% of parents whose children are served in a self-contained setting.

Summary of overarching themes. The overarching themes identified in this study emphasize the importance of appropriate academic programs and class settings to the attainment of academic and career goals. For the effect of academic setting on academic goal attainment the overarching theme of the appropriateness of the class setting for meeting academic goals focused on the importance of the class setting for students and their exposure to the curriculum required to meet their goals. The second overarching theme is the appropriate development of academic and social skills for meeting academic goals. The two themes focus on the academic classroom settings that are required for students to develop the necessary skills to move on in their academic careers.

For career goal attainment the first overarching theme is: Accessing an appropriate academic or job program is important to career goal attainment. This theme focuses on the programs the student has been exposed to and that exposure's impact on their eventual career goal attainment. The second overarching theme for how the academic setting affects career goal attainment is: Acquiring specific academic and social

skills are critical to career goal attainment. This theme focuses on specific academic and social skills the student has attained and will bring with him or her into a job setting.

For the students in general education settings the connection between accessing appropriately rigorous academic programs leading to postsecondary education was critical to academic and career goal attainment. For these students, academic goals are interweaved with career goals. For students in self-contained environments the emphasis on career goals early in their academic career sometimes led to a de-emphasis in academic attainment, which sometimes negatively impacted the ability to attain their career goals due to a lack of basic academic skills such as reading comprehension and math. It is interesting to note again the interdependence of the two goals even for the students who did not plan on accessing postsecondary education.

Summary of factors in a comparison of student profiles. The results of the student profile analysis show the factor that was of the highest importance for the influence of academic setting on academic goal attainment was social skills development in the educational environment. This factor had moderate importance in one profile and high importance for two. The second factor, academic rigor of program, had low importance in one profile and high importance in two profiles.

The factor that was of the highest importance for the influence of academic setting on career goal attainment in the student profile comparison was social skills development in the educational environment. This factor was of high importance for all profiles. The second factor, job-training services, had high importance for both students

in self-contained academic environments and low importance to the student in the general education environment.

Discussion of the effect of academic placements on academic and career goal attainment. The positive relationships between parent perceptions of LRE leading to academic and career goal attainment are corroborated by the thematic analysis of the questionnaire and interview data, leading to overarching themes, and in the student profile comparison. I discuss the importance of academic setting to career goal attainment and then to academic goal attainment. I also discuss the finding that social skills are an important factor for parents regarding both academic and career goal attainment.

Parents felt inclusion in academic environments with nondisabled peers was a key factor in career goal attainment primarily because their child would have to function in work environments with typical peers. So social skills developed through contact with these peers was critical to these career goals. There is no research that specifically examines a connection between academic setting and career goal attainment; however, four studies examine adult outcomes for individuals with HFA that include employment data. Two longitudinal studies, by Howlin et al. (2004) and Howlin et al. (2005), and a literature review on outcomes for adults with ASD by Howlin and Moss (2012), show that appropriate academic programming led to good postsecondary academic opportunities which in turn resulted in employment. Also, in a longitudinal study by Cedurland et al. (2008), findings showed that individuals who had good adult outcomes for employment had university degrees. In this study, academic setting was very

important to parents of students who accessed a general education setting, as the eventual academic goal of their children was a college degree to attain their eventual career goal.

The analysis of all data sources showed that the academic placement of students was a critical factor in academic goal attainment. For parents of students who access general education settings and for parents of students who access self-contained settings there is a perception that the classes and settings their children are able to access play a key role in their future. This belief is supported by research (Assouline et al., 2012) showing that an LRE is important in developing academic skills for gifted students with HFA and in a study by Kurth and Mastergeorge (2010) which found a general education setting can increase performance in students with autism who are lower functioning. In that study, academic setting was very important to parents of students who accessed a general education setting, as the eventual academic goal of their children was a college degree so they could attain their career goals. Eighteen out of 20 families interviewed in a study by Camarena and Sarigiani (2014) cited access to college for their children with HFA was very important in achieving their career goals. One of the students in the study said college was, “‘to learn as much as I can’ and to get a ‘good job’” (p. 122).

All parents in this study discussed how the limitations of autism shape their children’s academic and career choices and how critical it is to support their children’s strengths through supportive academic environments. These feelings are reflected in the above-mentioned study by Camarena and Sarigiani (2014) where parents and students discuss how college is an avenue to develop their special interest and talents. A parent in this study said going to college will, “‘Increase the odds that ‘exceptional abilities and

talents' will come with the disability and that higher education should be a context where 'smart' and 'talented' people should be welcomed even if it requires significant accommodation.”

This sentiment was echoed almost exactly by participant 81 in this study when she talked about the inclusive environment in colleges and universities,

Well frankly she better be in academia because there's no profession that will tolerate her quirkiness. So that's really like...whatever we say I know at least if I go that route she has more of a shot of surviving. Where smarts can out balance your weirdness.

Parents viewed the lack of support in academic environments as a hindrance to their children's ability to live and support themselves in the future, not just as an inconvenience that can be moderated through later postsecondary opportunities. Parents felt access to the appropriate academic environment not only affected their children's academic and career goal attainment but also would have a profound effect on their children's future quality of life. As this study has shown, four studies (Cedurland et al., 2008; Howlin et al., 2004; Howlin et al., 2005; Howlin & Moss, 2012) support this view and the findings of these studies show that appropriate academic settings can lead to postsecondary academic opportunities and better postsecondary outcomes.

There were differences in the thematic analysis of the questionnaire and the interviews regarding social skills. Social skills was not as prominent a theme in the analysis of the questionnaire data as it was for the interview data. This may be attributable to the nature of the questions on the questionnaire. The question asks the

responder to provide a reason why their child's academic setting may or may not have allowed him or her to meet their future career goals. This often resulted in a short response that only addressed a positive or negative result. During interviews parents often provided both positive and negative reasons why their child's academic setting would help, or hinder, their academic or career goal attainment.

Interview data and a comparison of student profiles found that for both groups of students social skills development and social skills supports were critical factors in attaining academic goals. Even parents who felt their children were well served academically in their current educational setting discussed how a need for social skills programming would affect the attainment of their children's academic goals. In a study by Saggars et al. (2011) students talked about how social skills supports helped them stay motivated for academics, "Like with some things it's sometimes not curriculum or stuff like that I need help with. It's maybe just personal stuff, which is good. It also helps. (Matthew)" (p. 11).

All parents who were interviewed were concerned that their child's level of social skills would negatively impact their academic and career goal attainment. Even students who needed the least amount of accommodations and who were able to access all classroom environments were perceived by their parents as needing support and remediation for social skills.

Parents also talked about how there needed to be a formal social skills curriculum in Virginia for students who are higher functioning. Parents in a study by Jackson Brewin et al. (2008) shared this same concern,

That's one of the things that a lot of teachers don't understand: That things that come to naturally to other children, with kids with Asperger's, traditionally, they have to learn. They actually have to be taught the social skills, but then they also have to learn basics of organizing their life. (p. 249)

There is limited research regarding students with HFA and their future academic and career goals; however, in a recent study by Camarena and Sarigiani (2014) parents and students were asked about college plans. The most serious nonacademic concern by parents in the study was the social skills needed by their children to negotiate college.

Summary of Results and Discussion of Factors That Facilitate Access to LRE, or Create Barriers to LRE

In order to answer research question three a qualitative investigation was conducted using three different data sources. This was done to provide a progressively more detailed examination of the data and to triangulate data sources.

Summary of Results

Three data sources were used to answer this question. First, there was an examination of two open-ended questions on the questionnaire completed by all 31 participants, and second there was a more detailed examination of data from the 11 extensive interviews and document analysis resulting in a synthesis of overarching themes. Lastly, there was an analysis of the 3 student profiles using thematic analysis and cross-case analysis techniques to provide a finer grained reexamination of interview data and artifacts comparing three divergent student profiles. The discussion of this question is

based on a holistic consideration of all themes and categories and the power and importance of these themes across research methods.

Summary of questionnaire data. The first examination of the phenomena of access to LRE for high school students with HFA was through an enumeration of categories that emerged from the analysis of the responses to two open-ended questions on the questionnaire. All participants ($N = 31$) had the opportunity to answer a question about factors that facilitate LRE and a question about factors that create barriers to LRE. Most answers were brief and contained one or two sentences. Twenty-eight parents responded to the question on the questionnaire about supports that facilitate access to LRE. Parents who had children in self-contained settings and parents who had children in general education settings were associated with the first five of the six themes. Supporting academics and using special interests to support academics was the primary support identified by half of the parents. Other supports to accessing LRE were: trained teachers, staff, and parents; good teachers and staff; and accommodations. Some parents whose children are in general education settings cited social skills supports as supports that facilitate accessing appropriate academic environments.

Twenty-nine parents answered the question from the questionnaire identifying barriers that prevent students from accessing LRE. Many parents felt that a lack of knowledge and/or training in HFA for teachers, counselors, and parents was a barrier to participation. As well, many parents felt that a lack of academic support, assistance, or accommodations was a barrier to LRE; of those parents seven had children in a general education environment and two had children in a self-contained environment. Six parents

felt their children's academic functioning was a barrier to LRE. Five of the six were parents of students in a general education setting. When these two themes are viewed together for the group whose children are in general education settings, a relationship between functioning and support emerges. The type of academic functioning mentioned by parents was executive functioning skills, self-regulation, and processing speed. Many parents discussed that their children had the intellectual ability to access and understand the material in classrooms. The supports these parents mentioned were primarily for these executive functioning and self-regulation deficits. As well, four parents mentioned the lack of support in advanced classes as a barrier to LRE; the types of supports were the same as previously discussed.

Summary of interview data. The thematic analysis of the 11 parent interviews and associated documentation revealed five categories associated with barriers to LRE and one category related to supports for LRE under the theme of least restrictive environment. Most categories were shared between parents of children in self-contained environments and parents of children in general education environments. The most prominent category identifying barriers, found with 82% of parents, was teachers not educated in HFA driving LRE. This varied a bit between parents not seeking class enrollment with particular teachers due to the teachers' lack of accommodation in the classroom, to parents being told by teachers that they did not want their child in their classroom if they had to accommodate their disability. Seventy-three percent of parents cited the availability of services driving their LRE decision. Primarily, services were dictating LRE: parents felt that services would not be provided so their children could

access LRE. Fifty-five percent of parents felt that school policies regarding access to other programs, such as career skills-oriented programs and end-of-year testing policies dictated their children's access to LRE.

One theme, fear, emerged only among the group of parents whose children were in self-contained settings. Forty-five percent of these parents discussed this category. Many parents of students in general education settings also had concerns about their children's mental health and stress but did not express fear for their children's physical safety or cite fear as a reason for the decision making process regarding an academic environment.

One theme identified through the thematic analysis of the interviews was related to facilitating access to LRE. Fifty-five percent of parents discussed how LRE was enhanced due to the flexibility of classroom teachers, administrators, or policies. One parent reported that her son was able to access classes that had state-mandated end-of-year tests in high school whereas in the past, due to testing policies, he was unable to access those classes in middle school. Often parents mentioned one or two teachers who had been instrumental in facilitating their child's access in less restrictive academic environments or who were willing to accommodate their child.

Overarching themes. The overarching themes resulting from the synthesis of the questionnaire and interview data showed barriers to LRE were teacher training and education; services and supports available in the academic setting; and parent fears discourage seeking of LRE placement. Whether or not a teacher was trained and educated in supporting students with disabilities or students with HFA was a primary theme in this

study. One overarching theme was identified for supports that facilitated LRE: Good teaching practice enhances LRE.

Summary of data from the comparison of student profiles. The comparison of three student profiles based on parent experiences looked at the data in a new way and sought to explore commonalities among divergent profiles. The factor that was of high importance across all three profiles in facilitating access to LRE was the ability of the school to support the student's needs. Three other factors were less important across profiles: available services in the academic environment, flexibility of teachers, and teacher training and education in HFA. The factors in creating barriers to LRE were found to be of less importance in general and were, in order of importance, preconceptions of student, teacher training and education, no available services in setting, and parent fears. The factor labeled preconceptions of student was new and resulted from a holistic examination of the three profiles focused on commonality and interrelationship. All parents described situations, of varying importance, which resulted from some kind of preconception that was made about their child that resulted in an academic placement.

Discussion of Factors That Facilitate Access to LRE, or Create Barriers to LRE

Common themes and factors emerged from examination of the three data sources. The questionnaire and the interviews provided overarching themes and the analysis of student profiles revealed findings that a lack of knowledge by teachers and other staff may drive a lack of support and accommodation in general education settings. The interplay of lack of teacher knowledge and lack of supports in academic environments is evident. These two themes and factors can be viewed independently or as an

interconnected entity in creating a complex system that influences student access to LRE. I discuss the importance of these themes and their relationship to prior research.

Teacher training and education in autism was identified multiple times through the thematic analysis of the questionnaire, interview data, the student profile analysis, and it was the primary overarching theme. It was identified as a barrier to LRE, as a factor in the decision-making process of whether to fight for LRE, and as a support for LRE. A lack of teacher training often leads to attitudes that students with autism cannot be served in general education settings. Barned et al. (2011) found that 53.3% of preservice teachers viewed students with autism as only educable in self-contained classrooms, and in a study by Sansosti and Sansosti (2012) teachers felt that one of the biggest barriers to inclusion was limited understanding of autism by teachers. Over half of the participants in this study felt this limited understanding led to stereotyping of students with autism as lower functioning and that this attitude and belief affected academic placement.

Starr and Foy (2012) found that teacher training was a key factor in parents feeling that their child was receiving an appropriate education. These feelings were often voiced in this study as impacting decision making regarding inclusion and LRE in academic settings. Students described feelings of frustration when teachers did not have the expertise to accommodate them academically in a study by Humphrey and Lewis (2008).

The category of fear emerged in the interviews among parents of students served in a self-contained environment and surfaced in discussions of teacher training and supports. This category was heavily related to the category of teacher education in HFA.

Some parents recounted incidents of their children being publically humiliated by teachers and staff due to their lack of understanding of autism. Some parents recounted a history of disciplinary actions being taken due to student behaviors that may be attributed to autism such as refusal to do work or noncompliance, elopement, being “rude,” and getting lost. The documentation provided by parents was important in verifying some of these accounts. Often, on the IEP, there was a record of how often a student had been disciplined for various offences and at the same time the narrative description of the student was complementary. A student whose records showed he had been formally disciplined 20 times was described as “kind” and “compassionate to peers”; another student who had been formally disciplined 23 times was described as a “pleasant and respectful student.” This paradox may be attributable to staff interactions that reflected a lack of understanding of behaviors by students with HFA. This is also seen in the literature. Starr and Foy (2012) reported 15.4% of parents in their study recounted suspensions and other disciplinary procedures of their children by untrained staff for behaviors related to autism. Jackson Brewin et al. (2008) also found that a lack of training in autism for teachers and school staff led to feelings by staff that their child was “bad” or attributed their autistic behaviors as “bad parenting.” This lack of training in autism also led to a lack of support. The overarching theme of parent fears discouraging seeking of LRE placement illustrates the effect of fear in the decision-making processes of parents when class setting for their children is considered.

Another theme that was pervasive across the questionnaire, interview, and student profile comparison was the importance of supports in accessing LRE. This was also the

second overarching theme of the synthesis of the interview and questionnaire data. Described as beneficial to accessing LRE were: academic supports and using special interests to support academics, accommodations, small class size, and social skills supports. A lack of academic supports, assistance, or accommodations were all cited as a barrier to LRE, and the availability of services were key drivers for LRE decisions. Similar to this study, Camarena and Sarigiani (2014) found parents felt they had to “fight” for services and accommodations so their children could access an appropriate education; these supports were key to academic success. Parents in a study by Jackson Brewin et al. (2008) talked about having to provide their own supports so their children could access their education and that many of the supports provided by the schools were inappropriate. Saggars et al. (2011) also found that academic supports were critical for success in a general education setting for students with HFA. The issues that needed to be accommodated were workload, handwriting, timeliness, and organization. Saggars et al. (2011) also found that stress was a key factor that needed support for students. Parents in this study echoed all of these concerns.

The ability of students to access advanced academic placements in order to access LRE was a strong theme throughout this study. Many parents expressed frustration over the lack of academic support and accommodation their children were receiving in advanced placement classes. Some parents recounted outright refusal of teachers to implement IEP accommodations and some parents talked about teachers actively advocating that their child be placed in another classroom. Schultz (2012) found that gifted students with disabilities are viewed by their deficits and not their strengths and

that most students in that study did not receive mandated IEP accommodations. As well, some of the students in the Schultz (2012) study were told that teachers would not allow them to use their IEP accommodations in their class. Assouline et al. (2012) found that weaknesses in working memory and processing speed in gifted students with HFA should be taken into account when decisions regarding inclusion in advanced classes and programs are being made. Assouline et al. (2012) also showed a statistically significant positive correlation between inclusion in gifted and talented programs to growth in academic skills. This was also a critical consideration for the students in this study who were college bound.

Parents in this study mentioned supports such as use of computers, small class instruction, assistance with organization, reduction of classwork, using student's special interests in instruction, and social skills instruction as important supports in accessing LRE. Students with HFA have been able to speak to what has contributed to access to academic environments. In a study by Humphrey and Lewis (2008) students reported that supports were important to their access to academic environments. Similarly, Madriaga (2010) and Sagers et al. (2011) reported that students with HFA cited small group instruction and social skills supports as important academic supports as did Jackson Brewin et al. (2008). Jackson Brewin et al. (2008), Scitutto et al. (2012), and Sagers et al. (2011) also found that focusing on a student's area of strength and flexibility in using that area of strength was an important academic support for students with HFA. Müller et al. (2008) asked adults with autism what academic supports were important to their academic success; small group instruction and quiet environments were mentioned.

In this study LRE was enhanced due to the flexibility of classroom teachers, administrators, or policies and through the work of good teachers and staff. The one overarching theme in this study for supports facilitating LRE was: Good teaching practice enhances LRE. Flexibility and good teaching are some practices that were mentioned.

Flexible policies are outlined in two studies about students with autism accessing LRE. Kurth and Mastergeorge (2010) and Schultz (2012) both discuss flexible policies as key to accessing LRE. Schultz (2012) describes AP policy in a school district as a significant factor in student access to LRE. Several parents describe flexible teachers and school policies that affected their children's access to LRE in a positive way.

Several parents mentioned how critical special teachers were in their child's academic success and how often this resulted in access to LRE. Many of the accounts of "good" teachers had little to do with special training but qualities that were intrinsic to their teaching and how these teachers viewed teaching itself. In studies by Jackson Brewin et al. (2008), Sciutto et al. (2012), and Starr and Foy (2012), the importance of good teachers who are flexible and student centered in their approach to students with HFA are a critical factor in accessing educational settings and curriculum. A parent in the Jackson Brewin et al. (2008) study talked about how important it was when a teacher showed her child respect as an individual. In Sciutto et al. (2012) parents talked about how valuing their child's differences and encouraging their child's individuality was important. Participant 4 in this study discussed how valuable a good teacher was for her daughter,

It really depends on the teacher. And I couldn't say Gen Ed or Special Ed is better than the other. She had one last year who was a Gen Ed teacher that I thought was amazing, just was smart, got it.

Policy Analysis

This study seeks to examine the processes of access to LRE in the Commonwealth of Virginia and how students with HFA are experiencing the LRE provision of the IDEA across the Commonwealth of Virginia. Of interest is whether the experiences of the children of the participants align with Virginia's best practices regarding LRE for students with ASD and whether these experiences are different across school divisions and academic settings.

How LRE is Being Applied in Virginia for Students with HFA

The findings in this study are compared to Virginia's best practices for students with autism and discussed below. I will then examine the policy implications of those findings through two conceptual frameworks: the Mutual Adaption Framework (Datnow & Park, 2009; McLaughlin, 1987, 1990), which is used to examine Virginia's implementation of the federal law mandating LRE; and the Hasazi, Johnston, Liggett, and Schattman Six Factor Framework (Hasazi et al., 1994) which examines the state and local perspective of the processes and causes of Virginia's implementation of LRE. Differences across school divisions and academic settings in parent perception of LRE are also summarized and discussed.

Virginia's best practices for students with HFA. *The Models of Best Practice in the Education of Students with Autism Spectrum Disorders* (VDOE, Office of Special

Education and Student Services, 2011) describes the academic guidelines for the education of students with ASD in Virginia. I compare this document to the findings of the questionnaire and the interviews. Some of the best practices outlined in this document under the subheading of LRE and inclusion are: teacher training to include a “variety of teaching methods to address diverse student need,” adequate academic supports for skill development in the general education classroom, adequate supports for interaction with peers, and team member collaboration to support inclusion.

Teacher and staff training. In *The Models of Best Practice in the Education of Students with Autism Spectrum Disorders* (VDOE, Office of Special Education and Student Services, 2011) the Commonwealth cites several research studies in evidence when it asserts, “For professionals and paraprofessionals to effectively support this group, there is a strong consensus in the research literature that all working with a student with ASD must be qualified to do so” (p. 30). A best practice that all staff be trained to support students with ASD was found to be lacking for most parents. The lack of teacher and staff training as an impediment to LRE is a finding in this study. The thematic analysis of the open-ended question regarding barriers to LRE found 38% of parents cited a lack of teacher training. One parent said this on the questionnaire,

I think that general education teachers are out to lunch for the most part. They have no clue and don't understand how to facilitate instruction, prevent bullying, and create a positive learning environment for all students, including students with disabilities. (P4)

Other themes from the interviews found 82% of parents felt teacher education in autism drove LRE decision-making. As well, 100% of parents felt that teachers and/or administrators were not educated in, or did not understand, autism and HFA. Also related to teacher training, 82% of parents felt their child had been punished or misunderstood by teachers who did not understand behavioral characteristics of their child's HFA.

Conversely, good teachers and staff were cited by 21% of parents. As well, good teaching practice enhances LRE was the single overarching theme for facilitating access to LRE. Other categories from the analysis of the interview data illustrated the importance of good supports or supports parents wished were in place. Twenty-nine percent of parents who responded to the questionnaire cited trained teachers as a support to accessing LRE.

In the thematic analysis of the interview data all parents (100%) experienced a lack of education and understanding of autism and/or HFA among teachers and administrators. Most parents (82%) experienced a lack of teachers' training in HFA driving LRE placements. Most parents (82%) felt that their child was punished or misunderstood due to HFA behaviors and/or characteristics. However, the thematic analysis of the interviews also found that 55% of parents felt teacher and staff flexibility enhanced LRE, and 82% felt good teachers and administrators can make a big difference for their child. The student profile comparison showed that teacher training was of high importance for the students who needed teachers who were able to accommodate their work and provide academic supports in the classroom. For the student who did not use many accommodations or supports teacher training in autism was of low importance.

Academic supports. In *The Models of Best Practice in the Education of Students with Autism Spectrum Disorders* (VDOE, Office of Special Education and Student Services, 2011) the Commonwealth acknowledges the need for adequate academic supports so that students with ASD may access LRE, “Modifications and accommodations must be provided to allow a student to successfully access the curriculum (or portions thereof) within a general education classroom as appropriate” (p. 45). The provision of supports and accommodations so that students with HFA could access all general education settings was a strong category that ran throughout the study. The provision of these supports affected not only LRE but academic and career goal attainment as well.

A thematic analysis of the questionnaire data found 38% of parents found a lack of academic support, assistance, or accommodations was a barrier to LRE. Also a lack of accommodations in advanced classes was cited by 14% of parents as a barrier to LRE.

A number of aids to accessing LRE were enumerated in the responses to the questionnaire. Thirty-nine percent of parents who responded to the questionnaire cited academic supports and using student interests to support academics as important for LRE. Also important to LRE was providing accommodations in the classroom (18%)

The thematic analysis of the interviews found that the majority of parents (55%) experienced the refusal of the school and/or teachers to provide supports in advanced classes. A much greater number of parents (73%) felt that the availability of services was a determining factor in the LRE decision. As well, 73% of parents felt that the IEP for their child was not followed in the classroom and/or mandated services were not

provided. All parents (100%) felt that services were inadequate, unsophisticated, or inappropriate for students with HFA and 64% of parents reported that a lack of classroom supports resulted in failure or a lack of academic growth for their children. Forty-five percent of parents felt that the lack of remediation of basic skills would impede their child's career goal attainment. An overarching theme in this study was services and supports available in the academic setting, which was identified as a barrier to LRE.

Social skills supports. The Commonwealth acknowledges the importance of providing adequate support for peer interaction and also states that, "failing to provide students with ASD with social and learning opportunities is likely to substantially impede development" (VDOE, Office of Special Education and Student Services, 2011, p. 28). The Commonwealth specifically mentions students with "Asperger's Disorder" when discussing the special social skills needs of students with HFA, "For many students with Asperger's Disorder, for example, their educational program can be unbalanced with too much time in inclusion and not enough direct instruction in social communication and interaction" (p. 28).

Social skills supports were critical to the children of the participants in this study. Parents of students served in both the special education and general education settings discussed this as a factor in their children's access to LRE and its effect on the attainment of their children's academic and career goals. The mean social skills level for all participants' ($N = 31$) children was 1.48 ($SD = 0.57$) and rated students who are "substantially below their nondisabled peers." The findings were essentially the same when the participant group was disaggregated into the two groups representing the

academic placement of their children. The thematic analysis of the questionnaire data revealed that some participants (17%) found their children's social skills a barrier to accessing LRE.

The analysis of the interview data showed 100% of parents felt that their children's unique needs were not met and 100% of parents felt that services offered to their children were inadequate, unsophisticated, and/or inappropriate for an individual with HFA. No parent felt that the social skills supports offered by schools were appropriate for their child, often discussing the unsophisticated nature of the supports offered. Many parents discussed social skills supports offered to their child that were more appropriate for students who were nonverbal and intellectually disabled.

Social skills support was pervasive in career and academic goal attainment. Seventy-three percent of parents felt social skills were critical to career goal attainment and 55% felt social skills were important to academic goal attainment.

Social skills supports were of very high importance in career goal attainment for all profiles analyzed in the student profile comparison and were of high importance for two profiles in academic goal attainment and of moderate importance for one profile in academic goal attainment. An overarching theme of this study, the appropriate development of academic and social skills for meeting academic goals, synthesizes many of these thematic findings.

Team member collaboration. In *The Models of Best Practice in the Education of Students with Autism Spectrum Disorders* (VDOE, Office of Special Education and Student Services, 2011) the complexity of addressing the educational needs of students

with ASD is recognized with an emphasis on collaboration, “Successfully educating students with ASD requires collaboration amongst a variety of professionals and stakeholders” (p. 57). This document also stresses that the team members must work together “to support the inclusion opportunity” (p. 28). In the thematic analysis of the interview data 45% of participants experienced a lack of collaboration between general education and special education professionals. Here a mother describes the lack of coordination of services between her daughter’s speech teacher, who is supposed to be providing consult support for social skills issues to the other teachers, and one of her daughter’s general education teachers.

Basically what that is, is the Speech teacher is just checking in with her classroom teachers to see if there is any issue. Now I’d say [the speech teacher] is probably not doing such a great job. Because either there’s a communication problem with the French teacher and her, or there sounds like there’s some issues there that were addressed in the IEP meeting (typical of whatever we’ve had in the past that had not been addressed before) that should have been dealt with. You know what I mean? Either he’s not communicating it or she’s not communicating it. (P4)

Conceptual Frameworks

Two conceptual frameworks will be used to discuss the apparent differences between the best practices for students with ASD established by Virginia and the practices experienced by study participants. The Mutual Adaption Framework (Datnow & Park, 2009; McLaughlin, 1987, 1990) examines the local implementation of LRE as a federal mandate and the Hasazi, Johnston, Liggett, and Schattman Six Factor Framework

(Hasazi et al., 1994) examines the processes of the state and local implementation of LRE. These frameworks will be used to contextualize the findings in this study.

The Mutual Adaption Framework. The Mutual Adaption Framework (Datnow & Park, 2009; McLaughlin, 1987, 1990) measures how the local implementation of a federal policy can change the policy. McLaughlin (1987) finds that implementation governs outcomes and results in a policy that benefits the local authority. There are several factors involved in local implementation of LRE in Virginia: local capacity, local commitment, and competing priorities. Local capacity involves resources expended for funding and time allocated to implement programs to ensure LRE. Local commitment, or attitude and motivation, ensures that these resources are used as intended in ensuring access to LRE. Competing priorities addresses other pressing needs that the local education authority may address ahead of LRE for students with HFA.

The Commonwealth of Virginia acknowledges through its creation of the best practices for students with ASD that there is a need to provide academic settings, and supports within those settings, that will best serve the needs of students with ASD. The best practice documents cite appropriate research and outline many practices that would certainly benefit students with ASD in accessing LRE. However, the Commonwealth is also aware that it has not met the federal performance threshold for LRE, indicator five, and has attempted to implement improvement activities over 8 years with uneven progress. As well, Superintendent's Memo 198 (Commonwealth of Virginia, Department of Education, 2008) also acknowledges there is a problem with LEAs providing LRE to students with disabilities who wish to access advanced placement classes and programs.

There is an awareness at the state level of appropriate practices needed to provide LRE to students with HFA and there is also an acknowledged problem with the implementation of LRE; however, many parents still report difficulty with access to LRE for their children with HFA. This disconnect may be occurring between the state and LEAs.

As long as an LEA is meeting the overall requirement of IDEA (2004), Part B, indicator five, there is no mandatory action taken by the state to ensure the local school division is in compliance among all disability groups. High school students with HFA may be such a small population that their LRE does not impact the overall statistics for meeting the requirements for indicator five. This means local school divisions may feel there is no threat to not complying with requirements in serving students with HFA. Some parents discussed the fact that they had to enlist the help of advocates and lawyers before the school would comply with various special education requirements. This participant discusses seeking help for the suspensions her son had due, in her view, to inadequate training of teachers in HFA and its characteristics, “but it’s a lot easier if you’ve got money to fight them, than it is if you don’t. I even tried to go through VOPA [Virginia Office for Protection and Advocacy]” (P55). Another parent hired a lawyer to get services for her son after what she viewed was years of educational neglect, “my lawyer made sure it was [a good IEP]. She was very good. She was the one who got us an hour and a half every day with a single teacher and it made a huge difference” (P23).

The capacity of the LEA to implement policy requires the allocation of resources in the form of money and time. An important finding in this study was how the lack of teacher training in HFA affected LRE. The time and money to train teachers so students

with HFA can access LRE in a general education environment may be a factor in a lack of implementation for the LRE policy. Several participants in this study mentioned a lack of funding for teacher training and supports so their child could access LRE, “but if they had the money or resources or whatever to hire somebody or to give him the attention, I think he would have gone lot farther along academically” (P45). The money allocated by the federal government to implement IDEA, Part B has never been provided in the amounts promised (New America Foundation, 2014). Without adequate fiscal support from the federal government a limited amount of funding will be available from the state to fund additional teacher training. This leaves local school divisions with few additional resources to fund teacher training—what many participants in this study describe is a pro forma implementation (McLaughlin, 1987) of LRE in their school division.

Unfortunately most of the parents in this study whose children required supports to access LRE in a general education setting either received available supports that were inadequate or the more appropriate supports they requested were refused. Many parents reported that there was an effort to provide some kind of support but the supports were not utilized appropriately or were inadequate. A participant discussed how a lack of time and motivation of a teacher to implement a support impacted his son,

Because in a meeting that we had, they said that the shop teacher’s more or less saying that, “I would not employ this kid because he takes too much repetition and I don’t have the time. I cannot train this kid,” so, and he’s like a part-time business owner and a teacher. “So I wouldn’t employ him, he needs too much repetition.” So I said “Well, what if you showed him how to wire something, and

filmed it and then played it on the iPod.” But they haven’t used it, they gave them to him and they haven’t done anything with it. (P45)

Many parents reported the attitudes and motivation of school authorities did not reflect an encouraging approach for providing additional supports to their children so they could access LRE. This lack of commitment to implement policy at the local level is the second factor outlined by McLaughlin (1987). Without this will to implement the policies within IDEA (2004) the policy will be adapted to fit the needs of the local school division. How individual participants implement policy is an aspect of the mutual adaption framework that we see in schools. The LRE mandate is a bottom-up policy; superintendents, principals, and teachers are critical to its implementation. Without the capacity or motivation to apply the policy as written, the intent will not be realized. As discussed previously, the research literature shows implementation of policies may be very school specific (Horrocks et al., 2008; Schultz, 2012). This was also pointed out by some of the participants in this study. One participant illustrates how a lack of will by the principal of a school to implement a new program for intellectually disabled children in his school not only affected his support of the program but affected his support of the teacher he hired to implement the program:

[The principal said], “I’ve never had a program for mentally retarded here before and I don’t want to have one now, but they’re making me have one....” And [the teacher] had no support, no support. They basically went, “I’m not interested” like I said, the principal said, “I’m not interested in having that program” and it was

sort of like, “so I hired somebody because I had to, and here’s your class and ‘Good luck to you.’” (P92)

This reflection could be viewed as a new way in which a “policy is transformed as individuals interpret and respond to it” (McLaughlin, 1987, p. 174).

Another participant discussed what she thought was a lack of will to train teachers in autism by her school district because they turned down a program to train teachers about autism:

They decided they didn’t need that. Thank you. Like I said, there were five other counties in Virginia that did take it. So, it’s not even, like Virginia policy, or anything like that. They just decided they knew enough [about autism] and said no thank you to free training. (P55)

Competing priorities of resources and other policies is the last factor in the mutual adaption framework. The implementation of LRE may be unimportant when compared to other demands on a school division or school. Competing priorities induce local-level actors to mold the policy to fit their needs and circumstances. Some parents discussed the priorities of school administrators they encountered had little to do with students with HFA or programs to ensure LRE. One parent said she never saw an administrator in her son’s IEP meeting unless it was for an issue the principal thought was important:

In the ninth grade the principal used to come when the lawyer came. The center principal. But typically, no, [administrators did not attend IEP meetings]. There was no...only when we got to the point where somebody from the head special office had to come.... (P23)

Another participant talked about a reaction from a principal when she suggested a program for students with HFA that would help with inclusion:

But he was a little, and I am not blaming him, he just really did not know... what to do. You could tell he was sort of caught and, “Oh! [surprised voice] we have nothing for that,” and “I hadn’t thought of that,” and “this hadn’t happened,” you could just see that he was sort of frozen, in it. (P92)

The mutual adaption framework identifies how individuals at the state, school division, and school level frame policy implementation and create a new policy to fit their needs. The requirements of the LRE mandate of IDEA (2004) at the federal level are not necessarily maintained at the local level when the application of LRE reflects the needs of local policy implementers. The students’ needs for LRE are served at the level dictated by the school division or school and not by federal mandate.

Hasazi et al.’s six-factor framework. Hasazi et al.’s (1994) six -actor framework examines local implementation of LRE policy. This framework uses finance, organization, advocacy, implementers, knowledge, and values in examining the process of implementing LRE within a school division or school. The authors of this framework found institutional structures influenced these factors. Whether a district, or school, applied LRE at a minimum or maximum level tended to dictate how LRE impacted decision making.

Hasazi et al. (1994) found that LEAs that used more restrictive environments in educating students with disabilities acceded to existing structures and policies already in place. If time, personnel, and money were not added to existing resources, current

structures were maintained in LEAs that did not prioritize LRE. However, in LEAs where LRE was a priority, resource limitations were treated as an opportunity to implement innovative programming to achieve LRE goals. The findings of this study support the notion that schools will implement LRE to conform to the existing practices in place.

There also must be support provided by administrators for teachers. Hasazi et al. (1994) found that the biggest obstacle for inclusion was the attitudes and beliefs of decision makers. Participant 4 described the principal of her daughter's school as an individual who viewed inclusion of students with disabilities as a normal, supported practice, "That's the principal. He doesn't call special ed, 'special ed,' it's 'exceptional education.' And when you go into the school it's got a cool vibe" (P4). Whereas participant 92's description of the school principal who said, "I've never had a program for mentally retarded here before and I don't want to have one now, but they're making me have one" reflected a school where a teacher was deliberately not supported in her implementation of the unwanted program. The difference between these two approaches to LRE is the core values held by the decision makers responsible for the implementation of LRE.

Hasazi et al. (1994) found knowledge building about inclusion and LRE was achieved by increasing instructional skills among general education teachers. Through building values of inclusion in combination with increased knowledge and awareness of HFA, LRE can be increased. This finding reflects a comment made by a participant in this study talking about how awareness of HFA will drive decision makers to mandate training for general education teachers to increase LRE:

[Rare] is the word I'm looking for. She's not. Not anymore. She's not. And it may have been a rare disability before but autism is not rare anymore. And I think until the state is requiring people to be educated about it and recognize it, then it's going to stay like it is. They need to make sure that people you know respect that. And they know that she exists and other people like her exist and that it's okay and you don't have to be afraid of her and you *can* teach her, she can be taught. But if they don't know that they may just like, "Well I don't know what to do with her because she's smart, so what's wrong with her?" "Why can't she?" You know? (P44)

Another finding of Hasazi et al. (1994) was that a motivating factor in LRE was parents exercising their rights through mediation, the use of advocates, and the court system. Unfortunately, some parents in this study discussed their use of lawyers, advocates, and state and federal programs to force schools to provide LRE for their children. This parent talked about how she lets schools know that she will use all means to ensure her daughter can access LRE:

And if I have a problem with them I let them know where I'm coming from. And if I'm going to go over their head, I'll let them know that I've called you, I've talked to you and this is what I'm going to do next, or even if I have called. Because I had to call the federal office of, you know, education, on one of her schools before. (P44)

Differences Across School Divisions and Parent-Perceived LRE

Some studies (Baker et al., 2010, 2012; Salmon, 2010) show that Virginia has a regressive education funding system which means that high- poverty districts receive less education funding than low-poverty districts. One of the goals of this study was to determine if comparisons of parent-perceived LRE could be associated to school division funding levels. The mean differences in parental report of LRE across school divisions were compared to the mean of the four LRE variables. This was an attempt to assess differences in LRE by school division. However, due to the low numbers of respondents for some school divisions, the results of this analysis should be viewed with caution.

As well, in a look at the variability of responses among participants for the school division that had the most respondents ($n = 11$), there was variability in the views of parents by school. One participant in this study described the differences in school climate regarding ASD between the school at which she was a teacher and the school her daughter with HFA attended, “They had Autism Awareness Week and she got really into Autism Awareness Week. My high school, we didn’t do anything for it. Nothing, nothing. Their high school did a ton. The turnout was great.” A tentative conclusion based on this data may be that although the school division a student attends may have an impact on LRE, there are differences between schools within school divisions that may have more of an impact on LRE. A finding in Horrocks et al. (2008) reflects this. The study found that school principals who believed in the inclusion of students with autism in general education settings, or who were more educated in ASD, consistently

recommended higher academic placements than principals who did not believe in general education inclusion for students with ASD or who were not educated in ASD.

Differences Across Academic Settings and Parent-Perceived LRE

Equal access for students with disabilities to challenging programs and courses is the subject line on Superintendent's Memo 198 (Commonwealth of Virginia, Department of Education, 2008) sent to all school division superintendents on August 29, 2008. This memo outlines the responsibilities of all school divisions to provide supports to all students with disabilities in all general education environments to include, "academically challenging programs and courses." The memo is specific in mentioning two school division practices identified in Virginia that violate a student's right to FAPE:

The practice of conditioning participation in an accelerated class or program for a qualified student with a disability by requiring forfeiture of special education or related services to which the student is legally entitled is in direct violation of Section 504 and Title II regulations.

The memo also specifically mentions the practice of denying supports and accommodations to access general education classes:

The requirement for individualized determinations is violated when schools ignore the student's individual needs and automatically deny a qualified student with a disability the needed related aids and services in an accelerated class or program. Because participation by a student with a disability in an accelerated class or program is generally considered part of regular education or regular

classes referenced in Section 504 and IDEA, a LEA may not deny that student the needed related aids and services in these programs or courses.

In this study, parents whose children were in general education settings and attempted to access advanced placement classes were often barred from access to these settings by the refusal of teachers to accommodate their children.

Implications for Policy

Accessing the least restrictive academic environment is a critical bridge to the future for students with HFA. Not only does an appropriate academic environment advance the intellectual skills and the social development of students with HFA, it also impacts their ability to access higher education and postsecondary training, participate in a satisfying career, and live independently. Prior research has established the importance of utilizing the skills and talents of individuals with HFA in order to achieve future goals. The participants in this study also stressed the importance of the quality and appropriateness of their children's academic setting in achieving academic and career goals their children had set for themselves. Although the importance of good teaching and well-trained teachers were cited as supports to inclusion, many parents identified significant barriers to accessing the academic environments parents felt were most appropriate for their children.

A comparison of the findings in this study to the best practices for the inclusion of students with ASD in Virginia found many gaps in what has been established as best practices and what is actually occurring. Parents who felt their children were accessing the appropriate academic setting needed no accommodations or supports to facilitate their

access into the educational environment. Parents whose children needed accommodations and supports to access less restrictive environments were either not given them or their children were placed in very restrictive environments in order to access supports.

The foundation of the concerns for parents who felt their children were not appropriately included in academic environments was teacher training. Parents felt a lack of teacher training led to a lack of LRE and inappropriate teaching methods and supports. This in turn negatively impacted the academic and career goal achievement for their children. The Commonwealth of Virginia is aware of the best practices required to facilitate access to LRE for students with ASD in Virginia; however, the application of best practices is not occurring in all school divisions and schools. The policies established by the Commonwealth of Virginia must be enforced and LEAs must be held accountable for the inclusion of all their students with disabilities in appropriate educational environments that “best meet the learning needs and develop the strengths of the student” (VDOE, Office of Special Education and Student Services, 2011, p. 28).

This section outlines improved practices for policy at the state level. In the next section improved practices are outlined at the local level. At the state level the Commonwealth must address deficits in implementation of LRE and execute all activities as outlined in the program of improvement in the *Part B State Performance Plan 2005-2012* (Commonwealth of Virginia, 2014b) for indicator five. There must be consistent implementation of LRE in all school divisions across the Commonwealth. All stakeholders at the state level must be involved in a reconceptualizing of LRE for students with HFA. A research-based social skills curriculum must be developed and

adopted to address the unique needs of students with HFA. As an acknowledgement of the need for appropriate human development of individuals with HFA, HFA must be reframed as a difference, not a deficit.

Finally, in order to understand the phenomena of LRE in Virginia for students with HFA an evaluation study of an exemplar program should be conducted. Questions that should be asked and answered regarding this program are:

1. What are they doing to provide services?
2. How are they training their teachers?
3. What supports are being offered to their teachers?
4. Profile student demographics, accommodations, and outcomes.
5. Study administrator and teacher attitudes.

This program should be compared and contrasted to other school divisions to determine service provision, improve and increase teacher and administrator training, facilitate improved student access to appropriate academic settings, and improve student inclusion and outcomes.

Implications for Practice

At the local level, improvements in the application of the LRE policy must include building awareness of HFA and achieving an adequate knowledge base among all stakeholders to include administrators, teachers, parents, and students. This can be achieved through quality professional development in supporting students with HFA for administrators, teachers, and all staff who work with students with HFA. The improvement in professional practices will address key deficits in the application of the

LRE policy and in implementing *The Models of Best Practice in the Education of Students with Autism Spectrum Disorders* (VDOE, Office of Special Education and Student Services, 2011) set forth by the Commonwealth. Administrative practices should be addressed in supporting all teachers in accommodating and supporting students with HFA in all classrooms. Education is needed for school staff that will instill values of ability and access for students with HFA. Hopefully, as a result of increased awareness, academic placements will be based on students' strengths and not on students' deficits.

Implications for Future Research

The purpose of this study was to explore, through parental report, access to LRE for high school students with HFA, how LRE affects academic and career goal attainment, and how students with HFA are experiencing the LRE provision of IDEA in the Commonwealth of Virginia. Based on the findings of this study several areas are suggested for future research.

Relationships were found between student academic skills and parent perceptions of inclusion. Some of these relationships reflect a developing research base regarding academic strengths and weaknesses of individuals with HFA. Using academic weaknesses that may be a characteristic of autism to disqualify students from academic settings will hinder individuals with HFA from developing their strengths and experiencing success in achieving future academic and career goals. Research should continue to assess whether an academic profile exists for students with HFA in an effort to educate schools and educational staff about the academic needs of students with HFA.

Many parents in this study felt the academic inclusion of their children with HFA was less than appropriate. Some of the factors that contributed to parental feelings of a lack of inclusion were a lack of teacher training and a lack of support offered in classrooms. There is a gap in the research regarding the barriers and supports that impact inclusion of students with HFA in general education environments; more study should be conducted identifying these barriers and supports. Additionally, more inquiry regarding the inclusion of students with HFA in general education environments should be explored from the perspective of administrators and teachers.

This study used quantitative and qualitative methods to evaluate the perceptions of parents regarding their children's academic skills, their children's access to LRE, and the impact of their children's academic setting on their children's academic and career goal attainment. However, the small sample size limited the kinds of statistical tests that could be used to analyze the data. Future studies of this kind would benefit from larger population samples and a greater number of quantitative statistical tests for a deeper analysis of these phenomena.

Lastly, there is limited research regarding the school settings of individuals with HFA and how these school settings have impacted these individuals from the perspective of the individuals themselves. Exploring the experiences of individuals with HFA in school environments and how these environments have impacted their postsecondary goals is not only an important avenue of study but a way in which the voices of those most affected by educational practices can be heard.

Limitations

This study had several limitations such as small sample size, the self-reported nature of the data, and researcher bias. Although triangulation of data sources and research methods were employed to mitigate these limitations, some of the limitations affected the kinds of statistical analysis that could be used to answer the research questions.

The purposeful, criterion-based selection of participants for this study, although a strength in the research design, did limit the population sample. The estimate of the number of students with HFA in the Commonwealth did not take into account a practice that may be occurring within the Commonwealth of discontinuing services for students with HFA before entry into high school. Several parents of students served in the general education environment reported that as their child was transitioning into high school there was an attempt by the school division to either eliminate all services and discontinue their child's IEP or transition them into a 504 plan. Parents reported this was due to the high intellectual functioning of their child but it did not take into account the needed supports in the areas of social skills and mental health. All parents refused the discontinuation of their children's IEPs and their children are attempting to access services and accommodations provided by their IEPs in high school. Sixteen participants from the initial sample were eliminated because their child did not have an IEP in high school.

Many parents in this study were informed of the study through their affiliation with parent advocacy groups and through the use of a computer. This resulted in a sample of parents who may be assumed to be relatively well educated and are active in the

autism community. This may not be representative of all parents who have children with HFA. No parents accessed the study through the Facebook page that was created to reach out to a more diverse population.

The small sample size of 31 participants limited statistical analysis. Although the sample was representative of many school divisions over a wide geographic location there were some school divisions that were represented by only one participant. This limited the confidence level of conclusions based on statistical analysis by school division. As well, although the information provided through IEPs and other medical records was enough to verify that all participants' children had an overall or verbal IQ over 70, there were not enough data from specific IQ tests to supply IQ scores for all participants, so statistical tests could not be run based on IQ score. Additionally there were not enough participants from each autism diagnostic criteria to report any differences based on diagnostic criteria.

Although there was triangulation of data sources, and the data that was reported in the study was verified through IEPs and other records, the data was the result of self-report. Not all parents who have children with HFA may have the same experiences or opinions represented by this sample.

Researcher bias was a consideration during all phases of the study. Although extensive validity checks were employed such as a researcher identity memo, interview memos, member checks during and after the interview process, and the consistency of procedures and instruments across participants, the fact remains that my participation in the process of data collection may have injected some researcher bias into the results.

APPENDIX A

THE IMPACTS OF ACCESS TO THE LEAST RESTRICTIVE ACADEMIC ENVIRONMENT FOR ACADEMIC AND CAREER GOAL ATTAINMENT FOR STUDENTS WITH HIGH-FUNCTIONING AUTISM AS REPORTED BY THEIR PARENTS

Thank you for participating in this questionnaire.

This research is important in gaining insight into the school experiences of students with high-functioning autism.

The next page will direct you to an informed consent form that tells us you are agreeing to participate in this research.

Please read all directions carefully before answering the questions.

Informed Consent

INFORMED CONSENT FORM

RESEARCH PROCEDURES

This research investigates the perceptions of parents of high school aged children with high-functioning autism (HFA) regarding access to the least restrictive academic environment and its effects on their children's academic and career goal attainment. If you agree to participate, you will be asked to complete this computer-based questionnaire that will take approximately 10 to 20 minutes. Participants will be entered into a raffle to win a \$75 Target gift card. There will be two winners of one gift card each. Participants will be notified after questionnaire data collection via the method they have indicated on the questionnaire. Thank you for your contribution to this research.

RISKS

There are no risks for participating in this research.

BENEFITS

There are no benefits to you as a participant other than to further research into parental experiences with their children's access to a least restrictive academic environment for their children with HFA.

CONFIDENTIALITY

The data in this study will be confidential. Names and other identifiers will not be placed on surveys or other research data. If you volunteer for an interview, by providing your name and contact information on the questionnaire, the name you provide will only be used for contact purposes. Documents obtained from the participant through email, will not be printed and will be deleted after viewing to ensure confidentiality. Any audiotapes will be transcribed and destroyed after transcription. There will be no identifying information placed on transcribed interviews.

PARTICIPATION

Your participation is voluntary, and you may withdraw from the study at any time and for any reason. If you decide not to participate or if you withdraw from the study, there is no penalty or loss of benefits to which you are otherwise entitled. There are no costs to you or any other party. Inclusion criteria for participants in this study are: parents of children with HFA, who attend a public high school, or who have graduated from a public high school in the last two years, in the Commonwealth of Virginia. In order to be considered high functioning the high school students are required to meet the level of intelligence defined by this study: a verbal or full scale IQ at 70 or above. Parents, or guardians, of students who are not in a public high school, have graduated more than two years ago, who do not meet the definition of high-functioning autism, or who do not have an IEP for the last three years of high school will be excluded from the sample.

CONTACT

This research is being conducted by Laura Harris, a Doctoral student in Special Education at the College of Education and Human Development at George Mason University and Dr. Michael Behrmann, professor at the Special Education program and the College of Education and Human Development George Mason University. Dr. Behrmann may be reached at (xxx)xxx-xxxx. Laura Harris may be reached at xxxx@xxx.xxx for questions or to report a research-related problem. You may contact George Mason University Office of Research Integrity and Assurance at (703) 993-4121 if you have questions or comments regarding your rights as a participant in the research.

This research has been reviewed according to George Mason University's procedures governing your participation in this research.

CONSENT

I have read this form and agree to participate in this study. We recommend that you print a copy of this page to keep a copy of this informed consent for your records. If you want to document your informed consent, please print a copy of this form, sign it and mail it to:

Laura Harris
George Mason University, Fairfax Campus

College of Education and Human Development
Finley Building, 202
Mail Stop Number 1F2
Fairfax, VA 22030-4444

The George Mason University Human Subjects Review Board has waived the requirement for a signature on this consent form. However, if you wish to sign a consent, contact Laura Harris at xxxx@xxx.xxx.

1. I have read the informed consent and agree to participate in the questionnaire

- Yes
 No

Inclusion criteria

If your child is in high school please answer questions based on their current experience.

If your child has completed high school in the last two years please answer the question regarding his/her high school experience.

Please take this questionnaire only once. If you have more than one child with an autism diagnosis you may complete one questionnaire per child.

2. Does, or did, your child attend a public school in the Commonwealth of Virginia?

- Yes
 No

3. Does your child currently have an IEP?

Or if graduated, did your child have an IEP during the last three years of high school?

- Yes
 No

4. Is your child's full scale OR verbal intelligence quotient (IQ) on the most recent IEP, 70 or above?

If not on IEP, is the most recent full scale OR verbal intelligence quotient (IQ) obtained through educational or medical testing, 70 or above?

- Yes
 No

Demographics

5. What is your child's current full scale and verbal IQ, if known.

6. From which IQ test is the above IQ, if known.

- Weschler Intelligence Scale for Children
- Stanford Binet Intelligence Scales
- Naglieri Nonverbal Ability Test
- Test of Non-verbal Intelligence
- Don't know
- Other

7. Your child's current age

8. Your child's race

- American Indian or Alaska Native
- Asian
- Black or African American
- Hispanic or Latino
- Native Hawaiian or other Pacific Islander
- White
- Other

9. Your child's gender

- Male
- Female

10. Your child's autism diagnosis by medical professional/doctor

- PDD-NOS
- Autism or ASD
- Asperger Syndrome
- Autism Spectrum Disorder
- Non-verbal learning disorder
- Rhett Syndrome
- Other

11. What is the primary disability on your child's IEP?

- Autism
- Other Health Impairment (OHI)
- Speech/Language Impairment
- Emotional Behavioral Disability
- Developmental Delay
- Other

12. What is your child's current grade?

If your child is attending high school longer than four years, current grade should reflect credits earned.

- Freshman or first year in high school
- Sophomore or second year in high school
- Junior or third year in high school
- Senior or fourth year in high school
- Graduated high school one year ago (2013)
- Graduated high school two years ago (2012)

13. In which public school division does, or did, your child attend school?

- Accomack County

- Albemarle County
- Alexandria
- Alleghany County
- Amelia County
- Amherst County
- Appomattox County
- Arlington County
- Augusta County
- Bath County
- Bedford County
- Bland County
- Botetourt County
- Bristol
- Brunswick County
- Buchanan County
- Buckingham County
- Buena Vista
- Campbell County
- Caroline County
- Carroll County
- Charles City County
- Charlotte County
- Charlottesville
- Chesapeake
- Chesterfield County
- Clarke County
- Colonial Beach
- Colonial Heights
- Covington
- Craig County
- Culpeper County
- Cumberland County

- Danville
- Dickenson County
- Dinwiddie County
- Essex County
- Fairfax County
- Falls Church
- Fauquier County
- Floyd County
- Fluvanna County
- Franklin
- Franklin County
- Frederick County
- Fredericksburg
- Galax
- Giles County
- Gloucester County
- Goochland County
- Grayson County
- Greene County
- Greensville County
- Halifax County
- Hampton
- Hanover County
- Harrisonburg
- Henrico County
- Henry County
- Highland County
- Hopewell
- Isle Of Wight County
- King And Queen County
- King George County
- King William County

- Lancaster County
- Lee County
- Lexington
- Loudoun County
- Louisa County
- Lunenburg County
- Lynchburg
- Madison County
- Manassas
- Manassas Park
- Martinsville
- Mathews County
- Mecklenburg County
- Middlesex County
- Montgomery County
- Nelson County
- New Kent County
- Newport News
- Norfolk
- Northampton County
- Northumberland County
- Norton
- Nottoway County
- Orange County
- Page County
- Patrick County
- Petersburg
- Pittsylvania County
- Poquoson
- Portsmouth
- Powhatan County
- Prince Edward County

- Prince George County
- Prince William County
- Pulaski County
- Radford
- Rappahannock County
- Richmond
- Richmond County
- Roanoke
- Roanoke County
- Rockbridge County
- Rockingham County
- Russell County
- Salem
- Scott County
- Shenandoah County
- Smyth County
- Southampton County
- Spotsylvania County
- Stafford County
- Staunton
- Suffolk
- Surry County
- Sussex County
- Tazewell County
- Virginia Beach
- Warren County
- Washington County
- Waynesboro
- West Point
- Westmoreland County
- Williamsburg-James City County
- Winchester

- Wise County
- Wythe County
- York County
- Other

Characteristics as compared to nondisabled peers

14. My child's verbal skills are

- Substantially below his/her nondisabled peers
- Somewhat below his/her nondisabled peers
- About the same as his/her nondisabled peers
- Somewhat above his/her nondisabled peers
- Substantially above his/her nondisabled peers
- Don't know

15. My child's reading/decoding (sounding out words) skills are

- Substantially below his/her nondisabled peers
- Somewhat below his/her nondisabled peers
- About the same as his/her nondisabled peers
- Somewhat above his/her nondisabled peers
- Substantially above his/her nondisabled peers
- Don't know

16. My child's reading/comprehension (understanding what he/she reads) skills are

- Substantially below his/her nondisabled peers
- Somewhat below his/her nondisabled peers
- About the same as his/her nondisabled peers
- Somewhat above his/her nondisabled peers
- Substantially above his/her nondisabled peers
- Don't know

17. My child's writing/composition skills are

- Substantially below his/her nondisabled peers

- Somewhat below his/her nondisabled peers
- About the same as his/her nondisabled peers
- Somewhat above his/her nondisabled peers
- Substantially above his/her nondisabled peers
- Don't know

18. My child's math skills are

- Substantially below his/her nondisabled peers
- Somewhat below his/her nondisabled peers
- About the same as his/her nondisabled peers
- Somewhat above his/her nondisabled peers
- Substantially above his/her nondisabled peers
- Don't know

19. My child's social skills are

- Substantially below his/her nondisabled peers
- Somewhat below his/her nondisabled peers
- About the same as his/her nondisabled peers
- Somewhat above his/her nondisabled peers
- Substantially above his/her nondisabled peers
- Don't know

20. My child's executive functioning (ability to organize, judge time, plan) skills are

- Substantially below his/her nondisabled peers
- Somewhat below his/her nondisabled peers
- About the same as his/her nondisabled peers
- Somewhat above his/her nondisabled peers
- Substantially above his/her nondisabled peers
- Don't know

21. My child's working memory (problem solving while remembering) is

- Substantially below his/her nondisabled peers
- Somewhat below his/her nondisabled peers
- About the same as his/her nondisabled peers

- Somewhat above his/her nondisabled peers
- Substantially above his/her nondisabled peers
- Don't know

22. My child's processing speed (process information automatically and quickly) is

- Substantially below his/her nondisabled peers
- Somewhat below his/her nondisabled peers
- About the same as his/her nondisabled peers
- Somewhat above his/her nondisabled peers
- Substantially above his/her nondisabled peers
- Don't know

23. My child's functional skills (take care of personal needs, manage household chores, anticipate required needs) are

- Substantially below his/her nondisabled peers
- Somewhat below his/her nondisabled peers
- About the same as his/her nondisabled peers
- Somewhat above his/her nondisabled peers
- Substantially above his/her nondisabled peers
- Don't know

24. My child's emotional maturity (the ability to control emotions under stress) is

- Substantially below his/her nondisabled peers
- Somewhat below his/her nondisabled peers
- About the same as his/her nondisabled peers
- Somewhat above his/her nondisabled peers
- Substantially above his/her nondisabled peers
- Don't know

25. My child's eye/hand coordination (ability to control hand movement guided by vision, e.g., handwriting) is

- Substantially below his/her nondisabled peers
- Somewhat below his/her nondisabled peers
- About the same as his/her nondisabled peers
- Somewhat above his/her nondisabled peers

- Substantially above his/her nondisabled peers
- Don't know

26. Does your child have a special talent or expertise (perfect pitch, expert in a subject, performs better than peers in a particular skill, etc.)?

If yes, explain below

School Services

27. What special education services does your child have?

- Speech/Language
- Social skills instruction
- Occupational therapy
- Physical therapy
- Pull out services for academics, e.g., specialized reading or math instruction
- Resource room or class
- None
- Don't know
- Other

28. What accommodations does your child have on his/her IEP?

- Extra time on tests/or assignments
- Preferential seating
- Help with organization
- Do tests or work in quiet environment
- Use word processor/Alpha Smart
- Reduce number or length of assignments
- Sensory or other breaks
- Review missed/due assignments
- None

Don't know

Other

29. What is your child's current academic placement?

My child spends most of the day (more than 60%) in special education classes with no typical, nondisabled peers

My child spends most of the day (80% or more) in at least collaborative general education classes with typical, nondisabled peers

Served in public or private separate schools, residential placements, or homebound or hospital placements

Don't know

Other

LRE

Below is a paragraph explaining the least restrictive environment provision of the Individuals with Disabilities Education Improvement Act of 2004, which explains the rights of students with disabilities in public schools. Please read it and answer the following questions.

"To the maximum extent appropriate, children with disabilities,...are educated with children who are not disabled. Special classes, separate schooling, or other removal of children with disabilities from the regular educational environment occurs only when the nature or severity of the disability of a child is such that education in regular classes with the use of supplementary aids and services cannot be achieved satisfactorily."

These questions ask about recommendations your child may have received from teachers and administrators for educational opportunities that were more advanced than their current academic placement and accommodations and supports they may need and received

30. How often do your child's teachers recommend him/her for general education classes, advanced classes, Advanced Placement classes, International Baccalaureate classes, or enriched educational experiences?

Teachers never recommend my child

Teachers sometimes recommend my child

Teachers often recommend my child

31. How often do your child's administrators recommend him/her for general education classes, advanced classes, Advanced Placement classes, International Baccalaureate classes, or enriched educational experiences

Administrators never recommend my child

Administrators sometimes recommend my child

Administrators often recommend my child

32. If your child was recommended for a class/program by a teacher or administrator did he/she participate?

Yes

No

N/A

Accommodations after participation

33. Were his/her IEP accommodations followed?

Yes

Sometimes

No

Other

34. Why was your child not able to access or participate in the class/program?

Did not pass the placement test

Teacher would not accept them in the class/program

Other

Academic opportunity

35. To what extent do you feel your child has the same opportunities to access general education classes, advanced classes, Advanced Placement classes, International Baccalaureate classes, or enriched educational experiences as their typical, nondisabled peers?

Substantially less than his/her nondisabled peers

- Somewhat less than his/her nondisabled peers
- About the same as his/her nondisabled peers
- Somewhat above his/her nondisabled peers
- Substantially above his/her nondisabled peers

36. Has your child ever been enrolled in an advanced class, Advanced Placement class, International Baccalaureate class, or an enriched educational experience?

- Yes
- No

37. Did your child have IEP accommodations that should be followed?

- Yes
- No
- Other

38. Were his/her IEP accommodations followed?

- Yes
- Sometimes
- No
- Other

Parent request for access

39. Have you ever requested that your child be placed in a general education class, advanced class, Advanced Placement class, International Baccalaureate class, or participate in an enriched educational experience?

- Yes
- No

40. Was your child placed in that general education class, advanced class, Advanced Placement class, International Baccalaureate class, or able to participate in the enriched educational experience?

- Yes
- No
- Other

41. Were accommodations (either IEP and/or supplementary aids or services) requested for your child?

- Yes
- No
- N/A
- Other

42. Were those accommodations (either IEP and/or supplementary aids or services) followed?

- Yes
- Sometimes
- No
- N/A
- Other

43. Has your child ever been OFFERED supplementary aids and services (over and above IEP accommodations) so that your child could access a general education class, advanced class, Advanced Placement class, International Baccalaureate class, or participate in an enriched educational experience?

- Yes
- Sometimes
- No
- Other

44. Have you ever REQUESTED supplementary aids and services (over and above IEP accommodations) so that your child could access a general education class, advanced class, Advanced Placement class, International Baccalaureate class, or participate in an enriched educational experience?

- Yes
- Sometimes
- No
- Other

45. If supplementary aids or services were offered or requested, were those supplementary aids or services provided?

- Yes
- Sometimes
- No
- N/A
- Other

LRE and goal achievement

46. To what extent do you feel that your child was included in academic environments with their nondisabled peers “to the maximum extent appropriate”?

- Substantially less than was appropriate
- Somewhat less than was appropriate

- Inclusion was appropriate
- Somewhat more than was appropriate
- Substantially more than was appropriate

47. To what extent do you feel your child's current class placements will allow them to meet their future academic goals (advanced classes, special programs, college, area of future study, etc.)?

- Substantially limit academic goal attainment
- Somewhat limit academic goal attainment
- Neither limit nor advance academic goal attainment
- Somewhat advance their academic goal attainment
- Substantially advance their academic goal attainment

48. Why, or why not, will your child's current class placements allow them to meet their future academic goals?

49. To what extent do you feel your child's current class placements will allow them to meet their future career goals (jobs, training programs, type of career, etc.)?

- Substantially limit their career goal attainment
- Somewhat limit their career goal attainment
- Neither limit nor advance their career goal attainment
- Somewhat advance their career goal attainment
- Substantially advance their career goal attainment

50. Why, or why not, will your child's current class placements allow them to meet their future career goals?

School culture and attitudes

51. Thinking of the overall school culture (attitude of administrators and teachers toward students with disabilities), to what extent do you think students with high-functioning autism are perceived, by teachers and administrators, as being capable of participating in

general education classes, advanced classes, Advanced Placement classes, International Baccalaureate classes, or participating in an enriched educational experience or program?

- Substantially not capable of participating in those environments
- Somewhat not capable of participating in those environments
- Neither not capable nor capable of participating in those environments
- Somewhat capable of participating in those environments
- Substantially capable of participating in those environments

52. To what extent do you think GENERAL education teachers are aware of twice-exceptional students (students with a disability and an area of high ability) and how to accommodate them?

- Substantially not aware
- Somewhat not aware
- Neither not aware nor aware
- Somewhat aware
- Substantially aware

53. To what extent do you think SPECIAL education teachers are aware of twice-exceptional students (students with a disability and an area of high ability) and how to accommodate them?

- Substantially not aware
- Somewhat not aware
- Neither not aware nor aware
- Somewhat aware
- Substantially aware

Barriers and supports to LRE

54. What do you identify as the barriers that prevent students with high-functioning autism from participating in general education classes, advanced classes, Advanced Placement classes, International Baccalaureate classes, or participating in an enriched educational experience?

55. What do you identify as the supports that assist students with high-functioning autism to participate in general education classes, advanced classes, Advanced Placement classes, International Baccalaureate classes, or participating in an enriched educational experience?

56. What is/was the attitude of your child towards high school?

- Hates school
- Dislikes school
- Neither likes or dislikes school
- Likes school
- Loves school

57. Do you feel that your child has been educated with other high school students who are as intellectually able as he/she is?

- Substantially not
- Somewhat not
- Neither no nor yes
- Somewhat yes
- Substantially yes

58. Do you feel that your child has been educated with other high school students who have interests similar to him/her?

- Substantially not
- Somewhat not
- Neither no nor yes
- Somewhat yes
- Substantially yes

59. Please let us know anything else you want to tell us about your child's experiences accessing the least restrictive academic environment in high school

60. If we can contact you for a follow-up interview about your child's experiences in high school and accessing a least restrictive academic environment, please write in your first name, and the method of contact (e.g., phone number, email, Skype) that would be most convenient for you.

Thank you for participating in this questionnaire.
To further discuss the issue of access to academic environments for students with high-functioning autism with other participants in this research you can friend this Facebook group:

APPENDIX B

INTERVIEW: HIGH-FUNCTIONING AUTISM AND LEAST RESTRICTIVE ENVIRONMENT

Interview participants were told that they were free to end the interview at any time, and that they could refuse to answer any questions that made them feel uncomfortable.

By law, a discussion of the least restrictive environment and your child's academic placement must occur and a decision must be made by the IEP team at the IEP meeting.

Can you tell me about the discussion of the least restrictive environment, and academic placement, that occurred at your child's last IEP meeting?

Follow-up questions, if necessary:

- Was your child's academic placement pre-determined before the meeting?
- Explain the disagreement. Who was disagreeing and what were the reasons?
- Are you satisfied with the result of the academic placement?
- Do you think your child is in the LRE? Why or why not?

Tell me about the role your child's teachers and administrators played in your child's academic placement?

Follow-up questions, if necessary:

- Tell me about the attitudes, knowledge, and experiences that the teachers and administrators have about ASD affected the placement decision.
- Tell me about how the school policies/rules in the school affected the placement decision.

How did special services personnel, e.g. counselor, social worker, psychologist, speech therapist, etc., have input into your child's academic placement?

Tell me about the discussion about supports and aids that your child might need for school.

Follow-up questions, if necessary:

- How did that influence the placement decision?

Tell me how your child's current academic placement will help them achieve their future *academic* goals?

Tell me how your child's current academic placement will help them achieve their future *career* goals?

How do you feel your child's academic placement affects their relationship to their peer group and to their social development?

How do you feel your child's academic placement affects how they view school and learning?

APPENDIX C
CONTACT EMAIL

Good Morning/Afternoon [name of person],

I am a doctoral candidate and education research assistant at the Department of Education and Human Services at George Mason University. I am in the process of writing my doctoral dissertation about students with high-functioning autism who attend public high schools in the Commonwealth of Virginia, their access to the least restrictive academic environment, and how this access has impacted their academic and career goal attainment. Adolescents with high-functioning autism is a population that is greatly under-studied and little is known about their school experiences and how these experiences impact their future success.

As a mother with a son with Asperger syndrome I am aware of the critically important information that parents of children with autism can provide. As a part of this study I will ask parents of individuals with high-functioning autism who attend high school, or have graduated high school in the last two years, to fill out a questionnaire about their children's experiences accessing general education, advanced, AP, and IB classes, and enriched educational experiences. It is very important that we hear the voices of parents from all regions of Virginia.

The purpose of this email is to ask for your assistance in this study. As one of the leading advocacy organizations for individuals with autism and your support of education, research and resources for individuals with autism and their families you are in a valuable position to help advance research about adolescents with high-functioning autism. I would greatly appreciate your assistance in spreading the word about this study to parents of high school aged children with high-functioning autism by mentioning our Facebook page (Virginia Autism Research), where parents can access our questionnaire, and by posting our questionnaire link to your web page.

I am available at any time to answer questions you may have about this study, and my research in high-functioning autism, so that you have all of the information you need to make a decision that is best for individuals with autism, and their families, in the Commonwealth of Virginia.

You may contact me at:
xxxx@xxx.xxx at any time.

Thank you for your consideration in participating in this critical research,

Laura Harris, PhD(c)
Research Assistant
Division of Special Education and disAbility Research
George Mason University

APPENDIX D
PARTNER LIST

Facebook Contacts

Asperger Syndrome Education Network
www.aspennj.org

Autism Society of Central Virginia
https://www.facebook.com/permalink.php?id=94856648531&story_fbid=10153120913343532

Central VA Autism Action Group (CVAAG)
<http://www.autismva.org/whatwedo/autismactiongroup>

Greater Roanoke Valley Autism Action Group (GRVAAG)
<http://www.autismva.org/whatwedo/autismactiongroup>

Inclusive Schools Network
<http://www.inclusiveschools.org/>

New River Valley Autism Action Group (NRVAAG)
<http://www.autismva.org/whatwedo/autismactiongroup>

Online Asperger Syndrome Information and Support (OASIS)
www.aspergersyndrome.org/

Organization for Autism Research
<http://www.researchautism.org/>

Piedmont Autism Action Network (PAAG)
<http://www.autismva.org/whatwedo/autismactiongroup>

Southwest Virginia Autism Action Group (SWVAAG)
<http://www.autismva.org/whatwedo/autismactiongroup>

Wrong Planet

www.wrongplanet.net

Listservs/Email Blasts

Asperger Information and Support (AS IS), Arlington, VA

<http://www.inova.org/inova-in-the-community/care-connection-for-children/parent-resource-directory/as-is-asperger-syndrome.jsp>

AutismResourceKinnection – Peninsula area

(<http://www.meetup.com/AutismResourceKinnection/message/?recipientId=9575167>)

<http://www.meetup.com/AutismResourceKinnection/>

Autism Society of Central Virginia

Email: asacv@aol.com

Commonwealth Autism Service

<http://www.autismva.org/>

The disAbility Resource Center of the Rappahannock Area, Inc.

<http://www.cildrc.org/>

Ed Fairfax

<http://www.faape.net/>

Fairfax Alliance for Appropriate Public Education (FAAPE)

<http://www.faape.net/>

Jewish Community Center of Northern Virginia

<http://www.jccnv.org/>

Parent Education and Training Center (PEATC)

<http://www.peatc.org/>

Parents of Autistic Children- Northern Virginia (POAC-NoVA)

<http://www.poac-nova.org/>

Special Ed Fairfax

<http://www.faape.net/>

Special Education PTA (SEPTA), Arlington, VA

<http://www.arlingtonsepta.org/>

Tidewater Autism Society of America

<http://www.tidewaterasa.org/>

Training and Technical Assistance Center Virginia (TTAC) Region 5, Central Virginia

<http://www.ttacjmu.org/>

Website Announcements

Virginia Commonwealth University – Virginia Autism Center for Excellence (VCU-ACE)

<http://www.vcuautismcenter.org/>

APPENDIX E

FLYER

We need parents of public high school students with high-functioning autism to contribute to RESEARCH!

Please help us with an empirical study about your child's experience with the least restrictive environment at school, and how access to inclusion has impacted your child's ability to meet their future academic and career goals.

See us on Facebook at Virginia Autism Research and fill out this questionnaire:

<https://www.surveymonkey.com/s/LREHFA>

Two participants will win a \$75 Target gift card!

APPENDIX F
IEP/DOCUMENT CHECKLIST

IEP/Document Checklist

Present levels of academic performance (PLOP)-

Student strengths and weaknesses:

IQ test scores

Date:

FS=

VIQ=

PIQ=

IQ test used:

Subject competency tests (SOL):

Teacher comments and concerns:

Parent comments and concerns:

Services:

LRE:

Less 40% _____

More 80% _____

Special Placement _____

Accommodations/modifications:

Goals (IEP):

Transition statement

Academic goals:

Career goals:

Other documentation

Type:

Relevance:

APPENDIX G
IRB EXEMPTION

DATE: October 31, 2013

TO: [REDACTED] PhD

FROM: [REDACTED] University IRB

Project Title: [517771-1] The Impacts of Access to the Least Restrictive Academic Environment for Academic and Career Goal Attainment for Students with High Functioning Autism as Reported by Their Parents

SUBMISSION TYPE: New Project

ACTION: DETERMINATION OF EXEMPT STATUS

DECISION DATE: October 31, 2013

REVIEW CATEGORY: Exemption category #2 & 4

Thank you for your submission of New Project materials for this project. The Office of Research Integrity & Assurance (ORIA) has determined this project is EXEMPT FROM IRB REVIEW according to federal regulations.

Please remember that all research must be conducted as described in the submitted materials.

Please note that any revision to previously approved materials must be submitted to the ORIA prior to initiation. Please use the appropriate revision forms for this procedure.

If you have any questions, please contact Karen Motsinger at 703-993-4208 or kmotsing@gmu.edu. Please include your project title and reference number in all correspondence with this committee.

APPENDIX H
INFORMED CONSENT FORM

The Impacts of Access to the Least Restrictive Academic Environment for Academic and Career Goal Attainment for Students with High-functioning autism as Reported by Their Parents

INFORMED CONSENT FORM

RESEARCH PROCEDURES

This research is being conducted to determine your experiences in accessing a least restrictive academic environment for your child with HFA and its impact on your child's academic and career goal attainment. If you agree to participate, you will be asked to participate in an interview of approximately 10-30 minutes. With your permission the interviews will be audio recorded for transcription. In order to substantiate data provided on the questionnaire the researcher will complete a check-list of demographic, academic, and functional data provided on IEPs, medical records, and other documents volunteered by parents.

RISKS

There are no foreseeable risks for participating in this research.

BENEFITS

There are no benefits to you as a participant other than to further research about access to educational programming for students who have HFA.

CONFIDENTIALITY

The data in this study will be confidential. Names and other identifiers will not be placed on research data. Documents obtained from the participant through email, will not be printed and will be deleted after viewing to ensure confidentiality. Any audio tapes will be transcribed and destroyed after transcription. There will be no identifying information placed on transcribed interviews.

PARTICIPATION

Your participation is voluntary, and you may withdraw from the study at any time and for any reason. If you decide not to participate or if you withdraw from the study, there is no penalty or loss of benefits to which you are otherwise entitled. There are no costs to you or any other party

CONTACT

This research is being conducted by Laura Harris at the Division of Special Education and disAbility Research at George Mason University; the faculty advisor is Dr. Behrman who can be reached by email: mbehrman@gmu.edu. The student researcher may be reached at xxxx@xxx.xxx for questions or to report a research-related problem. You may contact the George Mason University Office of Research Integrity & Assurance at 703-993-4121 if you have questions or comments regarding your rights as a participant in the research.

This research has been reviewed according to George Mason University procedures governing your participation in this research.

CONSENT

I agree to audio recording _____ **I do not agree to audio recording _____**

I have read this form and agree to participate in this study,

Signed, _____ Date: _____

APPENDIX I

INTERVIEW THEME SUMMARY BY CATEGORY, PARTICIPANT, FREQUENCY, AND PERCENTAGE

Table I1.

Interview Theme Summary by Category, Participant, Frequency, and Percentage

Category	Participant with category	Frequency of category among participants	Percentage of participants with category
Theme: School Climate, Teacher, Administrator, and Parent Attitudes			
Teachers/admin not educated/do not understand autism/HFA	4, 13, 23, 27, 44, 45, 51, 52, 55, 81, 92	11/11	100%
Parent feeling powerless/fighting against the system	4, 13, 23, 44, 45, 51, 52, 55, 81, 92	10/11	91%
Good teachers/administrators make a big difference	4, 13, 23, 44, 45, 51, 52, 81, 92	9/11	82%
Parent doing job of teachers/service providers	4, 23, 44, 45, 51, 52, 55, 81, 92	9/11	82%
Refusal of school/teachers to provide supports in reg ed/adv. placements	4, 13, 44, 51, 52, 81	6/11	55%
Misinformation of IEP/LRE/or ignorance of special ed law by teachers/administrators	23, 44, 52, 55, 81	5/11	45%
Lack of collaboration between gen ed and sped	4, 23, 44, 52, 81	5/11	45%
Parent fearful of child's physical/emotional safety/well-being in placement	4, 13, 23, 52, 81	5/11	45%
Theme: Least Restrictive Environment			
Teachers not educated in HFA driving LRE	4, 13, 23, 44, 45, 52, 55, 81, 92	9/11	82%
Available services driving LRE	13, 23, 44, 45, 52, 55, 81, 92	8/11	73%

Category	Participant with category	Frequency of category among participants	Percentage of participants with category
LRE - Low expectations/preconceptions of autism driving placement/services	4, 23, 44, 45, 52, 55, 92	7/11	64%
Policies/testing driving LRE placement	13, 23, 44, 45, 52, 92	6/11	55%
LRE is enhanced due to flexibility of teachers/admin/policies	(4, 13, 23, 27, 44, 51	6/11	55%
Parent fears about staff/students affect LRE	13, 23, 52, 55, 92	5/11	45%
Theme: Individualized Education Plan and Supports			
Student's unique needs not addressed/satisfactorily met	4, 13, 23, 27, 44, 45, 51, 52, 55, 81, 92	11/11	100%
Services inadequate/unsophisticated/inappropriate for HFA	4, 13, 23, 27, 44, 45, 51, 52, 55, 81, 92	11/11	100%
IEP processes not adhered to/merely a formality/paperwork exercise	4, 13, 23, 27, 44, 45, 52, 81, 92	9/11	82%
IEP not followed/services not provided	4, 13, 27, 44, 51, 52, 81, 92	8/11	73%
Lack of support results in academic failure/lack of growth	13, 23, 44, 45, 51, 52, 81	7/11	64%
Supports discontinued before entry into high school	4, 13, 51, 52, 81	5/11	45%
Theme: Student Functioning			
Punished/misunderstood due to HFA behaviors/characteristics	4, 13, 23, 44, 51, 52, 55, 81, 92	9/11	82%
Mental health concerns-depression/anxiety/isolation	4, 13, 23, 27, 44, 55, 81	7/11	64%
Gets along better w/typical peers	4, 23, 44, 45, 51, 81	6/11	55%
Bullied	4, 23, 81, 92	4/11	36%
Parent critical of child for HFA behavior	4, 51, 55	3/11	27%
Theme: Academic and Career Goal Attainment			
Social skills critical to career goal attainment	4, 13, 23, 27, 44, 51, 52, 55, 81	8/11	73%
Social skills critical to academic goal attainment	4, 23, 27, 51, 55, 81	6/11	55%
Academic level of classes key to academic goal attainment	13, 27, 44, 55, 81	5/11	45%
Lack of remediation in basic skills will affect career goal attainment	23, 45, 51, 52, 81	5/11	45%

Category	Participant with category	Frequency of category among participants	Percentage of participants with category
Academics abandoned when career skills chosen	13, 45, 52, 92	4/11	36%
Must access college to meet career goals	23, 44, 51, 81	4/11	36%
Diploma status will affect career goal attainment	23, 52	2/11	18%

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