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The “Autism Epidemic” and Texas Public Schools:
Economic, Educational, and Ethical Considerations for Public School Superintendents

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by

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DEDICATION

This treatise is dedicated to my family, whose support and love inspired me to attempt this goal and enabled me to reach it:

To my parents, Sue and Don, who are my first (and still my best) teachers. All I am is attributable to your examples and all I have is thanks to your selflessness.

To my brother, Bradley, who is the inspiration for this study and so much else.

To Donna, who is a daily reminder that the best dreams often appear to be the most unattainable.

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ABSTRACT

The “Autism Epidemic” and Texas Public Schools:

Economic, Educational, and Ethical Considerations for Public School Superintendents

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The University of Texas at Austin, 2015

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The purported existence of an “autism epidemic” has been vociferously debated both in the popular media and in academic research. One oft-cited study suggests that newly identified diagnoses of autism have increased 30% over the preceding decade to the point of potentially afflicting as many as 1 in 68 students (Centers for Disease Control, 2014). This influx merits close evaluation given existing research which postulates the existence of relationships between rates of ASD identification and ethnic and socioeconomic factors (Bhasin & Schendel, 2007). This potential disparity, coupled with ongoing budgetary constraints, the inherent ambiguity of existing litigation, and changing demographic projections, presents a number of financial, legal, and ethical impediments for public school superintendents in their ongoing efforts to ensure the efficacy and equity of services for students with ASD.

Accordingly, this study analyzed the existence of any potential correlations between rates of ASD identification (expressed as a percentage of enrolled students

whose primary Texas Education Agency special education eligibility criteria is “AU” or autism) and other ethnic and socioeconomic subpopulations evaluated in Public Education Information Management System (PEIMS) data. Prospective correlations were examined at both the campus level for each respective elementary campus in the case study district and at the district level for each Texas public school district which participated in a due process hearing predicated by an “AU” eligibility (or lack thereof) for the 2006-2007 through 2013-2014 academic years.

Research questions were analyzed using the Pearson Product Moment Correlation and Spearman’s ρ Rank Order Correlation Coefficients. The magnitude of practical effect size was determined using the Cohen’s d algorithm. This study returned the following selected results:

1. A statistically and practically significant positive relationship exists between percentage of campus “AU” enrollment and the percentage of campus enrollment for the White subpopulation.
2. Statistically and practically significant negative relationships exist between percentage of campus “AU” enrollment and the percentage of campus enrollment for the Hispanic and African-American subpopulations respectively.
3. Statistically and practically significant negative relationships exist between percentage of campus “AU” enrollment and the percentage of campus enrollment for the Economically Disadvantaged and At Risk subpopulations respectively.

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CHAPTER I

STUDY INTRODUCTION AND CONTEXT

Statement of the Problem

In Mark Haddon's recent bestselling book entitled *The Curious Incident of the Dog in the Night Time*, the narrator, a teenaged autistic savant named Christopher Boone, addresses the difficulties he experiences in interacting with others by noting that they typically "do a lot of talking without using any words." He also explains, "When people tell you what to do it is usually confusing and doesn't make any sense." Ironically, Christopher's perceptions of others as being inscrutable or nonsensical are potentially symbolic of the experiences many public school superintendents endure in their efforts to provide optimal educational opportunities for students who have been diagnosed with Autism Spectrum Disorder (ASD). They must successfully address the unspoken assumptions and competing agendas of their various stakeholders while they simultaneously struggle to make "sense" of what they are "told" to do within the context of an ever-changing landscape of government regulations, educational initiatives, and economic constraints. The students in their care, like Christopher, are susceptible to being viewed as similarly "confusing," statistical manifestations of an ambiguous disability for which the scientific community offers no universally accepted cause, no statistically proven course of treatment, and no foreseeable cure (Fombonne, 2001). The immediacy of this struggle is exacerbated by the growing numbers of students they are expected to serve. Rates of ASD identification in U.S. schools have grown from fewer than 3 cases per 10,000 students by the late 1970s to approximately 60 cases per 10,000

students today (Manning et al., 2011). Based on 2008 data from the Center for Disease Control, diagnoses of children as falling somewhere along the ASD continuum outnumbered for the first time newly identified cases of diabetes, Down Syndrome, and juvenile cancer (Volkmar, State, & Klin, 2009). Public Education Information Management System (PEIMS) data from the Texas Education Agency indicates that this trend has shown no signs of abating at the state level since this landmark year. In 2008-2009, the year the CDC released the aforementioned findings, 30,179 students qualified as autistic or “AU” under TEA eligibility criteria, representing 6.4% of the total special education population of 464,789. By 2013-2014, the number of students qualifying as “AU” had risen to 45,404, or 10.2% of the special education enrollment statewide. Further, this rate of growth represents an additional 3.8% increase over the 2008-2009 totals despite 8,126 fewer students being classified as meeting TEA eligibility criteria for special education services and a 10% decline in students qualifying as learning disabled (“LD”), the most populous eligibility category. Should increases in newly identified cases of autism/ASD continue at the current pace, the potential impact on Texas public schools is poised to be as widespread and pervasive as the disorder itself. However, despite this disproportionate rise in identification, the “talking” transpiring in educational circles is generally focused on the hypothetical origins of ASD and the best research-based approaches for successfully meeting identified students’ needs. Although necessary and laudable, these conversations routinely fail to address the larger issues of the financial, legal, and ethical implications of public school superintendents’ responses to burgeoning enrollments of students with ASD. As funding for schools has been

reduced to historically low levels, legal mandates have become increasingly stringent and prescriptive, and enrollment figures have portended fundamental changes in demographics, superintendents have nevertheless been simultaneously tasked with providing increasingly intensive levels of intervention and academic accountability, avoiding the legal challenges predicated on differing interpretations of “propriety” under federal law, and addressing the social justice implications of potential disparities in rates of identification among socioeconomic and ethnic subpopulations.

Financially, public schools are facing unprecedented budgetary shortfalls and are at the epicenter of a very public and often overtly political dialog regarding cuts in levels of state-mandated services. Given that appropriations of more than \$10.7 billion for public education spending represented almost 40% of the proposed state budget for 2012-2013 according to Legislative Budget Board data (*House Bill 1, 2012*), schools and school districts are being scrutinized closely by lawmakers seeking massive potential reductions. Public education, as defined in Chapter 42 of the Texas Education Code, is a “state responsibility” to be funded via the maintenance of the Foundation School Program, yet the above appropriations represent a reduction of more than \$3 billion from 2011-2012 funding levels (*House Bill 1, 2012*). In 2002, the most recent year that comprehensive national data is available, the President’s Commission on Excellence in Special Education reported that the average expenditure for special education students was \$12,474, as opposed to \$6,556 for non-disabled students. The report also notes that this figure has doubled since the late 1960s when these statistics first began to be compiled. In any case, the rise in the number of students with ASD, particularly when contrasted with

the state's overall decline in special education population, is poised to have a discernible effect on the quantity and quality of both general and special education programs public schools will continue to offer. The Texas Education Agency, in identifying autism as a qualifying special education condition, explicitly stipulates the completion of an *autism supplement* which necessitates a level of intervention clearly at odds with the "return to basic skills" so frequently touted in some circles as being the antidote to the educational budget deficit. These services, mandated for consideration in Texas Education Code under "educational programming practices," include but are not limited to:

extended day and/or school year, in-home and community-based training, parent/family training... provided by personnel with experience in Autism Spectrum Disorders, suitable staff-student ratio, communication interventions, social skills supports and strategies, professional educator/staff support, and teaching strategies based on peer-reviewed, research-based practices for students with ASD (Texas Education Code Ch. 89 § 300).

Although the Individuals with Disabilities Education Act (IDEA) that was reauthorized in 2004 includes *autism* as one of its *qualifying conditions* for special education services, determinations of disability vary widely. This is primarily attributable to the fact that the continuum of behaviors and abilities a student with autism may exhibit is far broader than those in other categories. Unlike, for example, instances of physical impairment or traumatic brain injury in which assessments and interventions are to a degree objective and consistent, the broad spectrum of cognitive abilities and behavioral needs among students with ASD make the process of qualification and the

subsequent qualifying condition a potential source of ongoing controversy (Jennings, 2005). Consequently, new ASD eligibilities comprise an inordinate share of the increase in the special education population in Texas public schools and represent an additional challenge to current educational and economic constraints given that its members are the least clearly delineated category. Further, the courts have recently held that the “meaningful educational benefit” standard established in IDEA must exceed “trivial progress” and that no “generic formula” can be applied to make this determination (Williams, 2005). In such instances, families may advocate that school districts implement expensive therapeutic programs under the “meaningful benefit” statute. Frequently this advocacy may take the path of litigation.

Thus another manifestation of the challenge confronting superintendents in deciding how best to service students diagnosed with ASD is the potential for increases in the number of due process hearings being conducted on behalf of these students. A due process hearing is a formal request to seek redress on behalf of a special education student via a hearing conducted by an impartial officer. This request is made by a parent or legal guardian directly to the Texas Education Agency. Although they are ostensibly designed to safeguard students’ educational rights and to allow parents and school personnel to attain consensus on how best to exercise these rights, the reality of these hearings is that they are potentially expensive and adversarial. Since 2010, the last year that TEA administered the Texas Assessment of Knowledge and Skills (TAKS), the predecessor to the more rigorous State of Texas Assessment of Academic Readiness (STAAR) standardized tests, 138 special education due process hearings have been

conducted in Texas per TEA documentation (Texas Education Agency, 2014). Of these, 58 or 42% could be directly correlated to an ASD diagnosis in some capacity – a number far disproportionate to the 10.4% of students in Texas meeting eligibility criteria for ASD during the 2013-2014 academic year. The potential rancor that may result from ambiguity surrounding both diagnoses of initial ASD eligibility and debates regarding adequate access to a Free and Appropriate Public Education (FAPE) under IDEA once eligible undoubtedly contributes to the fact that due process hearings surround ASD services are the fastest-growing and most expensive area of special education to litigate (Baird, 1999). Hearings can strain both the relationships among the entities charged with making educational decisions for a child and the finances of the school districts required to defend themselves in a legal proceeding. The implications for superintendents of parental proclivity to pursue the due process avenue are made all the more urgent by the costs that districts incur even if they are found to prevail. Further, although every public school district is of course subject to federal compliance regulations, this effect may prove to be more pronounced for those superintendents leading lower SES districts with fewer resources available to address any identifiable increase in ASD diagnoses and the often-unfunded mandates that are typically associated with the provision of special education services.

Therefore, in addition to financial and legal implications, there is a seldom-explored aspect of the alleged autism “epidemic” with a direct correlation to socioeconomic status which has profound ethical implications for superintendents. Legitimate questions exist as to whether students in more affluent environments are more likely to be identified as

having ASD and provided the requisite intervention (Bhasin & Schendel, 2007).

According to a 2006 U.S. Census Bureau study entitled *Income, Poverty, and Health Insurance Coverage*, Texas leads the nation in the number of uninsured children, with 1 in 5 children in poverty lacking coverage. Among these, African-American children are almost twice as likely and Hispanic students more than 3 times as likely as Caucasian students to be uninsured (Denavas et al., 2007). These inequities are crucial given the emphasis in the medical and educational communities on early identification of and intervention for early-onset developmental disorders such as ASD (McGee, Morrier, & Daly, 2001). Using eligibility for Medicaid as a control proxy for identifying students in poverty, one study found that adolescent African-American and Hispanic recipients were underrepresented for ASD diagnoses by a factor of 10. The mean age at which Caucasian study participants were identified as having ASD was 6.3 years versus 7.9 and 8.8 years for African-American and Hispanic students respectively (Ruble, Heflinger, Renfrew & Saunders, 2005). The positive impact of timely intervention is sharply contrasted by the 2011 Texas Council on Pervasive Developmental Disorders *2011 Annual Report*, which notes that over 110,000 Texans are currently awaiting benefits from Medicare-related services, with many having been relegated to “waitlists” for up to six years (p. 4). The role of schools in the provision of timely and developmentally appropriate screenings and supports is heightened by the budget cuts imposed on other social service sectors. Given that the economically disadvantaged and/or minority students who lack insurance coverage are potentially less likely to receive these resources and to be subsequently identified as having ASD, it becomes even more imperative that schools and

superintendents promote effective and equitable assessment of students regardless of economics or ethnicity.

Significance of the Study

Each of these rationales alone merits closer examination, but taken collectively, they provide an ideal lens through which current and future practitioners can view the conflicting constituencies to which the adept superintendent must respond and the varied expertise he or she must demonstrate. It also promotes closer examination of a critical theory paradigm at a time when Texas is fast becoming more ethnically, economically, and linguistically diverse. The State Demographer, in a 2013 report entitled *Texas Population Projections, 2010 to 2050*, projects that the Hispanic population will increase 2.5 times its current size to 22.3 million members by 2050. The non-Hispanic/African-American population is expected to increase by more than 4.2 million members during this period, with the White/non-Hispanic population predicted to plateau as early as 2020. Combined with an unprecedented influx of students with special needs, these projections demand that superintendents and staff have access to data which indicates how students are most equitably identified and effectively served and what economic constraints so doing may present. Inquiry into the implications of serving students who have been identified as having ASD is also imperative as it offers an apt microcosm in which to examine the challenges inherent in superintendents' efforts to ensure appropriate instruction for students with special needs across all categories while simultaneously appeasing all constituencies. While few would dispute the desirability of providing specialized interventions and additional supports to students with ASD, the disconnect

between what legislators, parents and school districts respectively identify as “reasonable” or “appropriate” is clearly the source of ongoing controversy – and has critical implications regarding future instruction and expenditure. Examination of the efficacy and ethics of these practices will help districts to potentially avoid further funding constraints arising from costly litigation. Faced with declining revenues and rising standards for financial, educational, and legal accountability, superintendents and school districts must increasingly resort to making decisions based not on which programs are most academically effective, but which are most economically viable. They must educate an increasingly diverse special needs population while simultaneously producing more demonstrable results for each student population under increasingly rigorous standardized testing models which do not necessarily place a premium on the programs championed by informed parents and advocacy groups. Superintendents across the state are uniquely positioned to engineer a fundamental shift in the way that students with special needs are identified and served, whether by design or default. These decisions have the capacity to profoundly impact conversations regarding the continued educational purpose and economic viability of public schools themselves.

Accordingly, this study is intended to address and contextualize these contrarian agendas as they pertain to the role of the public school superintendent, given that these individuals must grasp not only legal and historical precedent but also current “best practice.” By examining existing professional literature and current research, it will also suggest areas warranting further study to ensure the continued provision of equitable and

appropriate services to students identified as having ASD given the constraints inherent in the superintendent's role.

Conceptual Framework and Methodology

This study will employ both qualitative and quantitative methodologies via a priori non-content-specific coding and descriptive statistical analysis to complement existing literature regarding the purported existence of an “autism epidemic” (Fombonne, 2001). It will examine practices for and potential inequities in identifying students with ASD in a large urban public school district in Texas. It will utilize Public Education Information Management System and Texas Education Agency data to ascertain whether any statistically or practically significant disparities in rates of ASD identification exist between schools designated as Title 1 campuses eligible for federal supplemental funding and those which are not. It will extrapolate to an urban school district setting existing constructivist research surrounding questions as to whether ethnicity, language, and/or socioeconomic status may affect ASD identification and early childhood intervention (Basin & Schendel, 2007; Mandell et al, 2009). It will also examine at a district level the presumptive causes for due process litigation and the subsequent judgments issued since the reauthorization of IDEA in 2004 and add to the literature surrounding the financial and instructional impact of these judgments (Baird, 1999; Chambers, Harr, & Dhanani, 2003). A “case study” model offers specific advantages relative to this study, to include having students with ASD enrolled in sufficient numbers so as to be statistically significant, the potential for broader demographic diversity to facilitate meaningful comparisons among an equitable number of Title 1 and non-Title 1 campuses, uniformity

in the identification process used to diagnose ASD, and a district faculty presumably exposed to the same professional development opportunities and instructional initiatives.

The case study public school district (assigned the pseudonym Longhorn Independent School District for the purpose of this study) has also been selected specifically based on resemblance to current and projected state demographic trends to strengthen prospective study implications. Its current enrollment is 67,901 students as reported in Fall 2013 PEIMS data. Student demographics indicate that Hispanics constitute 56% of total enrollment, White students comprise 30%, and African-American students account for 7%. 46% of all students meet federal criteria to qualify as “economically disadvantaged,” 10% are classified as “Limited English Proficient,” and 9% are eligible for special education services. Of 44 elementary campuses, 19 are classified as Title 1.

Research Questions:

1. Do statistically and practically significant relationships exist between campus ethnicity and/or socioeconomic demographics as delineated by AEIS/TAPR subpopulation percentages and campus ASD enrollment percentages in the Longhorn Independent School District for the identified period?
2. What are the descriptive characteristics of due process hearings filed on behalf of students with ASD for the identified period?
3. Do statistically and practically significant relationships exist between district ethnicity and/or socioeconomic demographics as delineated by AEIS/TAPR subpopulation percentages and district ASD enrollment percentages in those districts involved in a due process hearing involving ASD during the identified period?

Limitations and Assumptions

1. This study is limited to elementary campuses in a single suburban 5A school district and findings may only be generalized accordingly.
2. Interpretation of the data collected accurately reflects the intent of the respondent.
3. The methodology to be employed offers an appropriate vehicle for addressing identified research questions.
4. Due process hearings represent only one avenue for dispute resolution at the district level and are anecdotally more likely to be adversarial.
5. The researcher is interpreting legal outcomes informally as an educator, not as a trained attorney. No attempt to establish legal precedent is intended or implied.

Operational Definitions

1. *Academic Excellence Indicator System (AEIS)* – Annual public reports published by the Texas Education Agency which compile data for each public school and public school district to include profiles of staffing patterns, enrollments, student demographics, and special programs.
2. *Autism Spectrum Disorder (ASD)* - A serious lifelong disability characterized by significant impairments in reciprocal social interactions and communication skills and a restricted/repetitive pattern of interests and/or behaviors as defined by the *Diagnostic and Statistical Manual of Mental Disorders, 5th ed.*
3. *Due Process Hearing* – A formal resolution process mandated by The Individuals with Disabilities Education Act (IDEA) which provides for hearings to resolve disputes relating to the identification, evaluation, or placement of a student with a disability or

regarding the provision of a free appropriate public education. IDEA also requires that the Texas Education Agency develop a model form to assist parties in requesting special education due process hearings.

4. *“Economically Disadvantaged”* – A designation included in Texas Education Agency reports which reflects a student’s socioeconomic status in terms of his/her eligibility for free or reduced cost meals under the guidelines of the National School Lunch and Child Nutrition Program.

5. *Eligibility Criteria* – The specific manner in which a student is determined by the Texas Education Agency to legally qualify for the provision of special education services. Autism (coded “AU”) is one of 13 disability categories recognized by TEA.

6. *Individuals with Disabilities Education Act* – A federal law most recently reauthorized in 2004 which mandates the provision of specific education services by states and agencies to students with disabilities to include an Individual Education Plan (IEP).

7. *Individualized Education Program (IEP)* – An individualized statement mandated under IDEA and developed on behalf of each special education student which addresses the student’s “present levels of academic achievement and functional performance,” includes a statement of “measurable annual goals,” including academic and functional goals, describes “how the child’s progress toward meeting the annual goals will be measured,” and stipulates “the special education and related services, based on peer-reviewed research to the extent practicable, to be provided to the child.” IEPs must be updated annually at minimum as a component of the special education *Admission*,

Review, and Dismissal (ARD) process must also delineate specific behavioral and instructional accommodations and modifications to include frequency, duration, and location of services (IDEA, 2004).

8. *Least Restrictive Environment (LRE)* – An instructional setting mandated by IDEA in which “to the maximum extent appropriate, children with disabilities, including children in public or private institutions or other care facilities, are educated with children who are not disabled, and that special classes, separate schooling, or other removal of children with disabilities from the regular educational environment occurs only when the nature and severity of the disability is such that education in regular classes with the use of supplementary aids, services and modifications cannot be achieved satisfactorily” (Individuals with Disabilities Education Improvement Act, 2004).

9. *Title I* - Title I students are students participating in a program authorized under Title I of the Elementary and Secondary Education Act (ESEA), which is designed to improve the academic achievement of disadvantaged students.

CHAPTER II

REVIEW OF LITERATURE

Diagnostic Origins of Autism

Pioneering research into what we now term autism spectrum disorder (ASD) is commonly credited to Leo Kanner, who observed “extreme aloneness” as influencing the desire for solitude and routine that many came to view as the predominant characteristics of adolescent autism (Kanner, 1943). The founder of the Johns Hopkins Children’s Psychiatric Clinic, Kanner sought to distinguish “autism” from schizophrenia and/or mental retardation, which were the prevailing diagnoses of the era for children who manifested many of the behaviors chronicled in his 1943 article entitled *Autistic Disturbances of Affective Contact*. In this work, Kanner provides observations detailing the behaviors of 11 identified study participants who were “introduced to us as idiots or imbeciles,” one of whom was enrolled in a school for the “feble-minded.” He depicts commonalities among these students such as “conversation obsessive in nature,” “detached from other children,” and “extreme upset at changes to environment” while noting that each is “unquestionably endowed with good cognitive potentialities.” Although Kanner purposefully juxtaposes his characterizations of these students’ “highly intelligent families” with their lack of “warmhearted parents,” he ultimately asserts that these students’ behavioral characteristics stem from “aloneness from the beginning of life” and posits that environmental variables merely exacerbate a preexisting condition. (Kanner, 1943, p. 245). However, many subsequent researchers failed to capitalize on this distinction and propagated the hypothesis that autism was a behavioral rather than a

neurological disorder which resulted from “refrigerator mothers” who coldly failed to demonstrate sufficient affection to their children. This position became one of the predominant psychodynamic theories of the 1950s and 1960s, perhaps popularized most extensively in noted child psychologist Bruno Bettelheim’s 1967 book *The Empty Fortress: Infantile Autism and the Birth of the Self*. In this work, Bettelheim likens autism to a “self-chosen state of dehumanization” potentially akin to that experienced by a concentration camp survivor and postulates that the “trauma” in the case of the child diagnosed with autism may result from a lack of stimuli and feedback provided by the mother (Bettelheim, p.7).

This view of autism as an incorrigible and possibly self-inflicted malady prevailed for decades. As late as 1972 the minutes of a national conference of The National Society for Autistic Children continued to use the terms “autistic” and “childhood schizophrenic” interchangeably. The Society listed one of its goals as “more focus on the needs of the institutionalized child” in acknowledging placement in that setting as the accepted mode of treatment. One paper in particular presented during this conference addresses the “positive benefits” of “placing the youngster in a large cardboard box with sufficient opening for ventilation” (Lettick, 1972, p.7).

Legal Precedent for Provision of Services

However, 1972 also saw the trial of the seminal case of *Mills v. District of Columbia Department of Education*, which would subsequently influence precedent regarding how special education law was written and interpreted at the federal level (Yell & Drasgow, 2008). The plaintiffs in the Mills case filed suit on behalf of seven “Negro” students who

were allegedly not allowed to attend school because they were deemed to be “mentally retarded, emotionally disturbed, hyperactive...” or “possessing behavioral problems” – criteria also mistakenly attributed to children manifesting symptoms of autism before ASD became accepted as a unique neurological disorder. The suit accuses the District of Columbia Department of Education (DOE) of incorrectly applying compulsory attendance law by determining that the students in question could not “profit” from being in the classroom as a result of their “conditions.” It further contests the DOE’s justification that there were “insufficient funds” to provide interventions of the intensity and scope that the students would presumably require. Specifically, the plaintiffs sought “alternative education” to include “constitutionally adequate... review... of the child’s status, progress, and the adequacy of any educational alternative” (*Mills v. District of Columbia Department of Education*, 1972). The court found in their favor and ruled that the district should additionally provide procedural safeguards for identification, notification, and placement. Its ruling further stipulated that parents be afforded the right to a hearing with an impartial officer, access to all student records, and a publicly accessible appeals process.

This successful suit predates the Education of All Handicapped Children Act (EAHC), which was signed into law in 1975. The EAHC, subsequently reauthorized as the Individuals with Disabilities Education Act (IDEA) in 1990 and as the Individuals with Disabilities Education Improvement Act (IDEIA) in 2004, introduced educators to the now-familiar concepts of designing and implementing a “free appropriate public education” (FAPE) and ensuring that students be instructed in their “least restrictive

environment” (LRE). It also mandated non-discriminatory assessment and placement practices, promoted greater degrees of parent involvement in decision-making, and expanded federal expenditures (IDEA, 11 1412(a)(24)).

The need for specific language in this regard resulted from congressional hearings which found that many states lacked adequate mandates to ensure access to public education for many students with disabilities or simply failed to provide such access by claiming a dearth of funds. Many children with disabilities were either “left to fend for themselves in classrooms designed for non-handicapped peers” or “excluded from school entirely” (Yell & Drasgow, 2008, p. 206). One study of Congressional findings in 1974 estimated the number of disabled students who were not enrolled in public school or receiving any verifiable educational services to be in excess of 1.75 million. The study further conjectured that more than 3 million students with disabilities who were attending school did not receive an education that was “appropriate to their needs” (Yell, Katsiyannis, Drasgow, & Herbst, 2003). The EAHC represents the federal government’s awareness that the Mills case and others of its ilk which championed the inclusion of students with disabilities merited a coordinated response at the national level similar to its prior efforts to racially integrate schools (Gollnick and Chinn, 1994).

The current incarnation of this imperative, the IDEIA, is comprised of six fundamental principles directed at states which remain essentially unchanged since the initial adoption of the EAHC (Turnbull, 2007). These statutes include *zero reject*, which prohibits schools from excluding any student with an identified disability, regardless of nature or severity. Each state is responsible for locating and assessing all students from birth to 21

years of age. The second principle, *nondiscriminatory identification and evaluation*, requires the utilization of nonbiased assessment instruments and the use of multiple assessments in the student's native language. The aforementioned *free and appropriate public education* (FAPE) principle requires the provision of all services at local education agency expense and mandates the creation of an individualized education program (IEP) detailing present competencies containing measurable short- and long-term goals subject to obligatory annual review. The *least restrictive environment* (LRE) principle necessitates that students with disabilities be educated in the same setting as students without disabilities "to the maximum extent appropriate." The *due process* provision entitles parents who contend that their child is being denied FAPE to pursue one of three avenues – mediation, a due process hearing before an impartial state-appointed hearing officer, or state or federal lawsuit. Lastly, the *parent and student participation* principle mandates that parents be included in the design and implementation of the IEP, grants them unrestricted access to student records, and requires that the campus notify parents of any proposed changes to a student's IEP or LRE.

Although these emphases on inclusion and anti-discrimination frequently promote a perception of IDEA as being a "companion piece" to the definitive civil rights legislation of the 1960s, the inherent ambiguity of "propriety" and the varying interpretations of the LRE statute promote ongoing controversy (Beratan, 2008). In examining IDEA's efficacy in imposing inclusive practices, Beratan notes the "implicit assimilationist

intent” within the law while simultaneously asserting that “the word ‘appropriate’ serves as a qualifier that overshadows the rest of the section.”

Accordingly, case law surrounding the interpretation of what constitutes FAPE and LRE has been inconsistent. Although the courts have typically held that the LRE and the “mainstreamed” general education setting are not always synonymous, their rulings often differ in the criteria to be employed for making these determinations (Rothstein, 2000). The difficulty of interpreting and applying precedent in implementing a student’s true LRE is further compounded by subsequent disagreements among parents and school districts surrounding what and how to teach, given that the courts intended to exert no influence in these areas in their efforts to mandate compliance with IDEA (Osborne, 1994). In applying the judicial standard of *qualified deference*, Congress chose to avoid creating a substantive definition of FAPE which would specify the educational materials or methodology to be utilized in a student’s IEP and instead allow school districts the latitude to make these determinations (Drasgow, Yell, & Robinson, 2001).

The case of *Hendrick Hudson School District Board of Education vs. Rowley*, tried by the Supreme Court in 1982, was the first case to specifically invoke IDEA provisions and provides the precedent for subsequent interpretations of FAPE and the qualified deference standard (Thomas & Rapport, 1998). The trial was conducted to determine whether a deaf student, Amy Rowley, was entitled to a sign language interpreter as a component of her FAPE, given that she was mainstreamed in a general education setting and was determined to be performing at a level commensurate with her peers despite the absence of an interpreter. The Supreme Court, in overturning a District Court ruling

upholding the provision of the interpreter, noted that “the Act generates no additional requirement that the services provided be sufficient to maximize each child’s potential” (*Board of Education v. Rowley, 1982*). Further, the Court in *Rowley* developed a two-part test to ascertain whether a school district has met its obligations under FAPE. The test addresses two central questions – whether the school has “complied with the procedures of the Act” and whether “the individualized education program developed through the Act’s procedures [is] reasonably calculated to enable the child to receive educational benefits” (*Rowley, 1982, pp. 206-207*). The establishment of a standard for “educational benefit,” although not delineated beyond charging school districts with determining what constitutes FAPE based on individual students’ IEPs, has rendered the *Rowley* decision “the most important and influential case in special education law” (Johnson, 2003).

Current Legislative Mandates

Despite the continued pervasiveness of its influence, however, the “educational benefit” standard established in *Rowley*, as well as its unwillingness to prescribe specific pedagogy to educators, is the source of ongoing controversy between parents and school districts, with initial diagnoses of and subsequent programming for ASD being particularly contentious (Seligmann & Zirkel, 2013). As delineated in IDEA, whose definitions the Texas Education Agency uses to categorize special education eligibility criteria, autism means “a developmental disability significantly affecting verbal and nonverbal communication and social interaction, generally evident before age three, that adversely affects a child’s educational performance.”

However, given that ASD lacks overt biological markers, the confirmation of its existence is based upon clinical observation of the existence of ASD-specific criteria and any associated psychometric testing, with the most widely cited criteria being derived from the Diagnostic and Statistical Manual of Mental Disorders (DSM) published by the American Psychiatric Association (Leonard, Dixon, et al., 2009). The researchers note that fluctuations in the incidences of ASD are potentially affected by a number of factors to include not only the “subjective interpretation” of the clinical criteria “across assessors,” but also changes in the criteria themselves. For example, the DSM-III published in 1980 for the first time distinguished between autism and “childhood schizophrenia.” It employed “infantile autism” as the descriptive characteristic for behaviors exhibited across the spectrum, and in so doing reclassified autism as a pervasive developmental disorder rather than a psychiatric one (American Psychiatric Association, 1980).

The 1987 edition of the DSM, the DSM III-R, changed the terminology to “autism disorder” and replaced the marker of “infantile autism” with the broader “onset during infancy or early childhood,” thereby making diagnostic criteria more inclusive by lessening the emphasis on identification in infancy while simultaneously enabling clinicians to diagnose ASD in adolescents previously presumed to be manifesting other conditions such as intellectual disability (Volkmar, 1996). The DSM III-R also incorporated a multicategorical checklist to include assessments of “qualitative impairment in reciprocal social interaction,” “qualitative impairment in verbal and

nonverbal communication,” and a “markedly restricted repertoire of activities and interests.” It required other documentation to include “parent reports, functional skills assessments, adaptive behavior scales, criterion-referenced instruments, ... and developmental checklists,” further mandated “specific observation in the student’s daily routine setting” and stipulated the inclusion of “at least one assessment procedure that is conducted on a different day” (American Psychology Association, 1987). The DSM-IV-R, published in 2000, augmented this checklist to require recipients of an autism diagnosis to manifest a minimum of two criteria in the “social interaction” domain, at least one criterion under “verbal/nonverbal communication,” and at least one criterion in the “restricted behaviors and interests” domain (American Psychological Association, 2000).

These shifts in nomenclature and methodology, while advancing the perception of autism as a legitimate “disease entity,” also marked the genesis of the process of “diagnostic substitution” – i.e. the process of diagnosing individuals with ASD rather than another more readily identifiable disability as a means of initially obtaining or expanding services (Fombonne, 2005). The most recent incarnation of the DSM, the DSM V, has foregone the multi-axial system of identification in favor of the creation of Autism Spectrum Disorder as a new singular entity encompassing previous diagnoses of Autistic Disorder, Asperger’s Syndrome, and Pervasive Developmental Disorder – Not Otherwise Specified (PDD-NOS). It consolidates the three areas of identification under previous iterations into a dyad comprised of “social communication/interaction deficits”

and “restricted and repetitive behaviors, interests, and activities” (American Psychology Association, 2013).

These revisions prompted a spate of concerns that individuals who previously met criteria under the DSM-IV-TR (Text Revision) criteria would subsequently fail to do so under the presumably more restrictive DSM-V standard (Gibbs et al., 2012). McPartland, Reichow, and Volkmar contended in a 2012 study that only 60.6% of 933 participants who has been determined to meet criteria for autism/PDD in a DSM-IV field trial would retain this classification under DSM-V standards. In another study contrasting DSM-IV-TR and DSM-V checklists, Worley and Watson (2012) noted that 32.7% of study participants would no longer meet criteria under DSM-V. Conversely, however, the DSM Neurodevelopmental Workgroup, the entity responsible for revisions to the existing DSM, explained its rationale for prospectively reducing the number of evaluative categories from three to two by noting that distinctions among the three categories made by assessors has been found to be inconsistent and subject to geographic/site variation (American Psychiatric Association, 2011). The APA elaborates in a recent press release that although the criteria for ASD are ostensibly more stringent than under DSM-IV in an attempt to improve specificity, field trials have indicated no significant reduction in the number of individuals who are so diagnosed (American Psychiatric Association, 2012). Researchers further note that, contrary to public concerns about potential loss of eligibility under the newly adopted criteria, the consolidation of prior qualifying conditions such as Asperger’s Syndrome and PDD into a single diagnosis may

ultimately increase access to services given that autism alone is recognized under IDEA as one of fourteen disability categories (Mahjouri and Lord, 2012).

The inherent ambiguity and variation of these diagnostic methodologies for ASD, coupled with the IDEA mandates for parental access to and participation in the provision of a child's FAPE, have led to an increase in ASD litigation (Hill & Hill, 2012). Zirkel (2011) notes that since the inclusion of autism as a specific eligibility criteria under IDEA in 1990, cases involving students with autism have comprised almost one third of the published court decisions surrounding implementation of FAPE/LRE under IDEA. He further specifies that students with autism were overrepresented in these proceedings compared to their percentage of the overall special education population by a factor of 10. This overrepresentation may be attributable to the costs associated with number and variety of services that families of students with ASD may incur due to the pervasiveness of the disorder and parents' desire for remuneration as a component of FAPE (Liptak, Stuart, & Auinger, 2006).

Regardless, the "due process" avenue mandated under IDEA has the potential to impose significant cost on all participants. According to a 2003 study of more than 1,000 local education agencies (LEAs) commissioned by the United States Department of Education Office of Special Education Programs entitled *What Are We Spending on Procedural Safeguards in Special Education?*, LEAs spent almost \$147 million on due process hearings and related litigation during the study year. Mean expenditure for each of 6,763 special education-related due process cases was \$18,160 (Chambers et al., 2003). Further, even if a parent should a parent opt to pursue formal mediation as an

alternative to litigation, in Texas all costs for mediation must be incurred by the school district (Gorn, 1999). In addition, as Newcomer and Zirkel note in a 1999 article appearing in the journal *Exceptional Children*, “increased litigation focused on special education issues has counteracted the general decline in education cases collectively” (p. 470). Specifically, they contend that

special education clearly bucks the general trend favoring school district defendants in education litigation. One explanation for this exception is that the highly prescriptive legislation and regulations governing special education put the burden of proof squarely in the school district’s court (p. 471).

This trend magnifies the IDEA stipulation that “in any action or proceeding... the court, in its discretion, may award reasonable attorney's fees as part of the costs to the parents or guardian of a child or youth with a disability who is the prevailing party” (IDEA §1451(e)(4)(B)).

Parents are also poised to incur expenditures given that those who cannot or opt not to retain legal counsel are actively discouraged from initiating a due process proceeding or appeal in federal circuit court. For example, the Second Circuit Court, in applying a statute commonly known as the *Cheung Rule* (in which a father who was not an attorney attempted to sue on his son’s behalf for violations of IDEA), explicitly stated its intention to “jealously” guard the interests of minors by opining that “it is not in the interest of minors or incompetents that they be represented by non-attorneys” (*Cheung vs. Youth Orchestra Foundation of Buffalo, Inc.*, 906 F2d 59, 1990). Other jurisdictions have concurred, and the Texas Attorney General, in Opinion GA-0936, notes specifically in

response to a TEA “Request Letter” from then-Commissioner Robert Scott regarding the permissibility of parents representing their children in local-level due process hearings that “we believe the state's general prohibition against the practice of law by non-attorneys applies to the due process hearings about which you ask.”

Due Process Implications for Public Schools

Such precedent is of particular importance to students with ASD and their families in Texas given both their burgeoning numbers and the fact that the protections Texas LEAs and their agents enjoy under statutes such as the Texas Tort Claims Act are tempered by the mandate for the explicit provision of identified services for ASD under the aforementioned “Autism Supplement” specified in TEA rule (19 T.A.C. Section 89.1055[e]). Despite this provision, however, existing research analyzing the outcomes of due process hearings for students with ASD in Texas is limited. Bossey (1995) reviewed due process hearings filed in Texas from 1983 to 1994 on behalf of students diagnosed with autism. He concluded that the incidence of autism has increased, that the majority of filings were predicated on an alleged actual or procedural violations of FAPE specifically related to a student’s LRE, and that the affected school district prevailed by a “marginal” majority in each case.

However, although the 2003 case of *Adam J. v. Keller ISD* offers Texas LEAs some relief in adjudicating alleged violations of FAPE by holding that “procedural defects alone do not constitute violation of the right to a free and appropriate public education unless they result in a loss of educational opportunity” (§ 25), districts are nevertheless held to an increasingly high standard in interpreting and documenting compliance

with existing state and federal law in programming for student identified as having ASD (Zirkel, 2011). Dicker and Bennett (2011) and Katz (2006) opine that the historical balance favoring school districts may change as a result of the proliferation of partnerships between private schools for students with ASD and highly specialized attorneys who assist parents in litigating for placement at district expense by utilizing precedent rulings. Given the convergence of these factors and the apparent predilection of parents to pursue litigation as a means of defining and/or ensuring their child's access to FAPE, many state (SEA) and local education agencies have responded by adopting pedagogical practices and educational policies specifically to avoid such litigation (Mandlawitz, 2002).

Therefore, in much the same way that the perception and definition of ASD have evolved from a psychiatric illness to one of neurology in response to advances in research and greater public consciousness, the "spectrum" of what constitutes appropriate instructional supports and interventions offered has changed in response to evolving legal precedent (e.g., Wing & Potter, 2002; Zirkel, 2011). Given the high standard for federal compliance and the current emphasis in Texas on stringent accountability measures for all students, including those who meet special education qualifying criteria, the tangible costs associated with the programs and personnel necessary to adequately implement legally mandated educational programs for ASD students have profound implications for campus and district-level administrators (Hughes, Combes, & Metha, 2012). The current scrutiny devoted to pedagogical issues represents a departure at the state level from the earlier "qualified deference" standard and is a response to federal concerns that not only

were students with disabilities held to inadequate academic standards, but also that school districts were insufficiently accountable for producing these results beyond a rote IEP process (Thurlow & Wiley, 2004). These concerns led Congress to order in 1997 that students with disabilities should be included in state accountability systems (IDEA; U.S.C.§1412(a)(17)(A)).

Pedagogy and Expenditure

This paradigm shift had a pronounced impact upon instructional oversight and expenditure. For example, in 2002, then-President George W. Bush established via Executive Order the President's Commission on Excellence in Special Education. The Commission was charged with, among other tasks, conducting a nationwide series of public meetings to examine special education inclusion practices and expenditures associated with compliance mandates under No Child Left Behind legislation. The report also notes that the criterion for defining "full funding" of the federal contribution for special education as being 40% of average per pupil expenditure (PPE) has no statistical basis other than the assertion among Congressional conferees that the cost of educating students with special needs to be "approximately twice the cost" of providing general education services. It further cites the U.S. Department of Education as establishing the true cost discrepancy at closer to 90% greater (p. 35). In stark contrast to the "meaningful benefit" statute employed under Rowley, the report goes on to note that:

While the law must retain the legal and procedural safeguards necessary to guarantee a "free appropriate public education" for children with disabilities, IDEA will only fulfill its intended purpose if it raises its expectations for students

and becomes results-oriented and not driven by process, litigation, regulation and confrontation. In short, the system must be judged by the opportunities it provides and the outcomes achieved by each child (*President's Commission*, 2001, p. 8).

Despite its ostensible aversion to litigation, however, this “results-oriented” approach has prompted controversy over methodology similar to that induced by lack of consensus over ASD’s etiology. “Results” are especially difficult to interpret for students with ASD given the potentially high levels of functioning many students already exhibit, the broad continuum of skills and behaviors unique to the ASD diagnosis, and dissent in the medical and educational communities regarding how and when to best diagnose and treat ASD (Zirkel, 2011). Feinberg and Vaca (2000), in examining the policy implications of this outcome-based focus, note that “the obligation of school districts to provide particular methodologies has become the focus of considerable due process hearings.”

Yell and Drasgow (2000) trace the many of these initial hearings to controversy over a district’s obligation to employ the Lovaas method of Applied Behavioral Analysis (ABA). Developed by University of California at Los Angeles psychologist Dr. Ivor Lovaas, the Lovaas method typically entails between 2 to 3 years of operant behavioral conditioning training in the student’s home from 2 to 40 hours per week in addition to specified inclusion support in a regular education setting. Programmatic emphases for ABA include periods of 1:1 instruction during which a teacher “cues” a behavior, elicits a predetermined response, and provides reinforcement and repetition (Lovaas, 1996). With estimated costs ranging from \$12,000 to \$70,000 per year, parents

advocating for this methodology sought to convince hearing officers and courts that school district's offerings failed to meet the *Rowley* standard because they did not convey "meaningful benefit." In 45 such published cases, parents prevailed 34 times (Yell & Drasgow, 2000).

More recently, the National Autism Center released in 2009 a study which identifies the "11 Established Treatments" determined by a panel of psychologists, pediatricians, speech-language pathologists, and other experts as being the most effective interventions for students with ASD. Purportedly based on over 700 existing studies, its recommendations include a "comprehensive behavioral treatment package" designed to teach social and functional skills in settings with 1:1 student-teacher ratios and a "peer training package" designed to train students in general education who do not have ASD how to model and initiate appropriate interactions with students diagnosed with ASD. Another frequently cited approach to promoting inclusion of students with ASD in general education settings involves the use of multiple antecedent-based or "priming" strategies. Antecedent-based interventions are typically designed to allay one of the most common social manifestations of the ASD diagnosis and one of the most formidable barriers to consistent inclusion practices – developmentally inappropriate behaviors with origins in an inability to recognize social cues accompanied by a disproportionate need for sameness or routine (Wilde, Koegel, & Koegel, 1992). In these instances students with ASD are explicitly taught to rehearse upcoming events or preview instructional materials under the direct guidance of a classroom teacher or instructional aide in order to ease any anxiety over unfamiliar content or an unanticipated change in schedule.

“Priming” and other strategies of this ilk clearly necessitate changes in staffing ratios and increased access to instructional materials in a wider variety of media, and superintendents and other policymakers must weigh carefully the instructional advantages to be gained from these expenditures. Their potential impact is borne out in a 2010 study conducted by the Economic Policy Institute (EPI) which indicates startling growth in the portion of public school budgets specifically devoted to instruction. The EPI study sought to compare spending data for “representative” schools in various geographical areas with assorted mechanisms for raising public school revenue. Adjusted for inflation, their findings note that changes in real total per pupil public school district spending reflected a mean increase of 142% from \$4, 636 2005 dollars per capita in 1967, an era predating the FAPE requirements mandated by the passage of EAHC in 1975, to \$10,849 in 2005. More ominously, despite the fact that the Texas districts represented in the study spent only \$9, 919 per capita, their mean spending increase was 215%. The study further notes that “larger increases were devoted to special education... a program that consumed very few dollars in 1967.” (Alonso & Rothstein, 2010). As Meredith and Underwood (1995) presciently argued in discussing “mission creep” - i.e. the seemingly exponentially demand to expand the scope of special education services - “the cost of educating disabled students is threatening our ability to educate nondisabled students in many districts, and, therefore, is placing the entire public education edifice potentially at risk.”

Economics, Ethnicity and Equity

This “risk” may be elevated for superintendents of ethnically diverse school districts, who must contend not only with the legal and financial implications of providing adequate programming for students identified with ASD, but also with the ethical implications of promoting adequacy in the identification process itself. Researchers have hypothesized that students from minority groups are evaluated for ASD less frequently (Mandell et al., 2002). Despite the extensive body of research devoted to the prospective causes of and approaches to the disproportionate representation of minority students in special education populations, comparatively minimal research has been devoted to ethnic disparities in the rate of autism identification (Dyches, Wilder, Sudweeks et al., 2004). Most investigations which attempt to corroborate any link between ethnicity and rate of ASD identification have focused on a family’s immigration status and have been inconclusive in documenting the prevalence of ASD within and across ethnic groups (Fombonne, 2005).

However, some researchers discount these results due to the propensity of the diagnostician to attribute behaviors which may be indicative of ASD to linguistic barriers and/or difficulty in assimilating to a new culture or environment (Jaspers et al., 2013). Begeer et al. (2009) suggest in fact that professionals diagnose ASD less frequently in children from minority groups because screenings are complicated by an “overlap between social and communicative domains that could be attributed to ASD, but also to an ethnic minority background.” Data compiled by the Centers for Disease Control’s Autism and Developmental Disabilities Monitoring Network (ADDMN) in 2007 suggests

that prevalence of ASD is higher among Caucasian children in 10 of 14 multistate sites studied when controlled for existing demographics. Findings further reveal that Hispanic children had significantly lower rates of prevalence when compared to Caucasian children in 43% of sites and to African-American children in 93% of sites (CDC, 2007). A subsequent study in the March 2009 edition of *The American Journal of Public Health* noted “significant racial and ethnic disparities in the identification of children with ASD” (Mandell et al., 2009, p.493). The researchers noted that, in instances where a *co-occurring intellectual disability* was present, Hispanic and African-American students were almost twice as likely as white students to be diagnosed with a disability other than ASD. They contend that, all other factors being equal, a minority student with lower levels of tested intellectual functioning is less likely to receive screenings or other interventions designed to detect the presence of ASD than is a white student of similarly tested ability. Conversely, minority students are presumably more likely to be diagnosed with a learning disability or mental retardation than ASD, potentially limiting their access to a broader continuum of therapies and interventions, to include the aforementioned ABA supports and more extended placements in a general education setting. The authors’ findings specifically note that “given a similar set of symptoms, practitioners may be more likely to diagnose autism in White children and intellectual disability in non-White children” (p. 497).

Further, despite the emphasis in the medical and educational communities on identification in early childhood as a component of an effective treatment program (e.g. Strock, 2004), the ADDMN data set reflects that Hispanic students in particular are likely

to be diagnosed with ASD at later ages. School districts with greater percentages of Hispanic enrollment have fewer ASD diagnoses (Palmer et al., 2010), although many researchers argue that ASD prevalence in these instances is in part influenced by limited access to healthcare and early childhood interventions (Liptak, Stuart, & Auinger, 2006).

Accordingly, research also suggests that socioeconomic factors may play a major role in rates of ASD identification. Fountain and Bearman (2011), in researching the effect of California's immigration policies on the rate of ASD diagnoses among Hispanic children, observe that "an autism diagnosis requires two main ingredients: a child with developmental symptoms consistent with autism, and the knowledge, resources, and incentives to negotiate the diagnostic process." They cite "differences in developmental expectations" as a potential barrier to early intervention and contend that "the process for seeking help for a health condition can be... highly constrained by institutional and social structures." Bhasin and Schendel, in their study entitled *Sociodemographic Risk Factors for Autism in a U.S. Metropolitan Area*, confirm "the potential for social class bias" in studies of autism and ethnicity (Bhasin and Schendel, 2007). Their findings appear to corroborate a link between rates of autism identification and socioeconomic status. The researchers noted, for example, that "children from higher SES families were associated with a greater likelihood of diagnosis of autistic disorder while children from families of lower SES were having their developmental and behavioral abnormalities characterized as cultural deprivation" (p. 672). The study also establishes "experience of the clinician" and "mothers who were highly educated" as being among the strongest associations for an ASD diagnosis. In a study of 3860 students with a preexisting ASD

diagnosis or manifestation of symptoms consistent with ADDMN criteria, Durkin et al. (2010) found a positive relationship between socioeconomic status and the prevalence rate of autism. Gradin (2008) notes that disproportionate poverty rates among minorities limits their access to information, education, and state-of-the-art health care, all critical components of ASD identification and programming.

Addressing these disparities becomes even more imperative given wholesale demographic changes occurring at the state and district levels. According to 2010 US Census Data, the percentage of households identifying themselves as Hispanic or Latino comprise 37.9% of the population, a 41.8% increase from 1999-2000 levels. Households reporting as non-Hispanic or Latino still represent 62% of the population, but their respective growth rate is only 10.9%. These rates, coupled with a 23.9% increase in the number of families identifying themselves as African-American, clearly illustrate the necessity of adequately identifying and servicing a minority special needs population in a state in which Hispanic and African-American residents are projected to outnumber Anglos as early as 2020. Similar changes are reflected in Texas Education Agency *Academic Excellence Indicator System* (AEIS) data, which indicates 2011-12 enrollment totals as being 12.8% African-American, 50.8% Hispanic, and 30.5% White. These demographics represent a significant shift from the IDEA reauthorization year of 2003-2004, in which African-American, Hispanic, and White totals were 14.3%, 42.7%, and 39.8% respectively. During this period, the percentage of students qualifying as *economically disadvantaged* increased from 51.9% to 60.4%, placing 3,008,469 students at risk. Nor are these changes in socioeconomic status confined to the more

impoverished end of the continuum. As identified by Region Service Center (RSC) membership, the Region XI Service Center in Fort Worth, while exhibiting the lowest rate of *economically disadvantaged* membership among the 20 RSCs at 49.2%, has nevertheless demonstrated 11.9% growth among this population, the largest comparable increase for any RSC in this period.

Despite these changes, however, the apparent disparity in the availability of resources to these students persists. According to TEA's 2011 *Snapshot Report* delineating resource allocation, the wealthiest tier of Texas school districts (with "property wealth" defined by their total taxable property value as calculated by the Comptroller's Property Tax Division divided by their student enrollment), have expenditures per pupil of \$14,075.00 with property wealth in excess of \$680,608.00. 26 of the districts included in this tier have per capita wealth in excess of \$2,440, 278.00. By contrast, districts in the most impoverished tier spends \$9,258.00 per capita based upon property wealth of \$101,595.00. The inequities in these districts' ability to generate local revenue are further exemplified by student: staff ratios of 15.5:1 in the bottom tier vs. 11.7:1 in the uppermost. Boyd & Shaw (2010) note that the demonstrable growth in enrollment among students diagnosed with ASD, coupled with the mandates for more inclusive practices and evidence-based interventions, have a direct impact on classroom practice.

Although every public school district is of course subject to federal compliance regulations, this impact may prove to be more pronounced for those superintendents leading lower SES districts with fewer resources available to address any identifiable increase in ASD diagnoses and the often-unfunded mandates that are typically associated

with the identification of and provision of special education services for students with ASD.

Once children with ASD enter the classroom environment, it is imperative to consider how their specific presentation manifests itself – i.e. where their observable characteristics fall along the spectrum, and how these manifestations will impact academic achievement and social well being (Kentworthy et al., 2005). The adept superintendent in Texas must employ similar considerations as unprecedented numbers of students with ASD enter his or her respective district. He or she must ascertain the “specifics” of how to comply with legal mandates which appear to be simultaneously more prescriptive and ambiguous, how to effectively expend resources in pursuit of individually based instruction without adversely impacting the collective academic program, and how to ensure the equitable well being of minority or disadvantaged students who may have been historically underidentified or underserved. The literature presented here suggests that the etiology of the “autism epidemic” will be inextricably linked to the efficacy of the superintendents charged with addressing its legal, instructional, and ethical implications.

CHAPTER III

METHODOLOGY AND RESEARCH DESIGN

The purpose of this study was to examine any potential correlations between campus rates of ASD identification and enrollment (expressed as a percentage of enrolled students whose primary Texas Education Agency special education eligibility criteria is “AU” or autism) and other identified ethnic and socioeconomic subpopulations as documented in the Academic Excellence Indicator System (AEIS) reports for each respective elementary campus in the Longhorn Independent School District in San Antonio, Texas. Given the critical theory implications of these prospective findings, statewide due process hearing decisions were then reviewed anecdotally and coded to ascertain the descriptive characteristics of each hearing filed on behalf of a student previously diagnosed with ASD or whose lack of an ASD diagnosis was among the issues being contested. These outcomes were then similarly analyzed to determine any district-level correlations among the variables detailed above. All quantitative and qualitative data was compiled for the school years 2006-2007 to present to better examine the longitudinal effects of the reauthorization of IDEA in 2004. The study examined the following questions:

1. Do statistically and practically significant relationships exist between campus ethnicity and/or socioeconomic demographics as delineated by AEIS/TAPR subpopulation percentages and campus ASD enrollment percentages in the Longhorn Independent School District for the identified period?
2. What are the descriptive characteristics of due process hearings filed on behalf of

students with ASD for the identified period?

3. Do statistically and practically significant relationships exist between district ethnicity and/or socioeconomic demographics as delineated by AEIS/TAPR subpopulation percentages and district ASD enrollment percentages in those districts involved in a due process hearing involving ASD during the identified period?

Operational Definitions

1. *Academic Excellence Indicator System (AEIS)* – Annual public reports published by the Texas Education Agency which compile data for each public school and public school district to include profiles of staffing patterns, enrollments, student demographics, and special programs. As of the 2012-2013 school year, the AEIS has been supplanted by the Texas Academic Performance Reports (TAPR), which codify similar information regarding demographics and accountability measures.

2. *At-Risk* – A designation which identifies a student as “at risk” of dropping out of school based on membership in one or more of 13 separate state-defined categories detailed under Texas Education Code §29.081. Categorical memberships include being Limited English Proficient (LEP), failing to advance from one grade level to the next in one or more years or to perform satisfactorily on a readiness test or assessment instrument in grades K-3, or being assigned to a district alternative educational placement (DAEP).

3. *Autism Spectrum Disorder (ASD)* - A serious lifelong disability characterized by significant impairments in reciprocal social interactions and communication skills

and a restricted/repetitive pattern of interests and/or behaviors as defined by the *Diagnostic and Statistical Manual of Mental Disorders, 5th ed.*

4. *Due Process Hearing* – A formal resolution process mandated by The Individuals with Disabilities Education Act (IDEA) which provides for hearings to resolve disputes relating to the identification, evaluation, or placement of a student with a disability or regarding the provision of a free appropriate public education. IDEA also requires that the Texas Education Agency develop a model form to assist parties in requesting special education due process hearings.

5. *“Economically Disadvantaged”* – A designation included in Texas Education reports which reflects a student’s socioeconomic status in terms of his/her eligibility for free or reduced cost meals under the guidelines of the National School Lunch and Child Nutrition Program.

6. *Eligibility Criteria* – The specific manner in which a student is determined by the Texas Education Agency to legally qualify for the provision of special education services. Autism (coded “AU”) is one of 13 disability categories recognized by TEA.

7. *Individuals with Disabilities Education Act* – A federal law most recently reauthorized in 2004 which mandates the provision of specific education services by states and agencies to students with disabilities to include an Individual Education Plan (IEP).

8. *Individualized Education Program (IEP)* – An individualized statement mandated under IDEA and developed on behalf of each special education student which addresses the student’s “present levels of academic achievement and functional performance,”

includes a statement of “measurable annual goals,” including academic and functional goals, describes “how the child’s progress toward meeting the annual goals will be measured,” and stipulates “the special education and related services, based on peer-reviewed research to the extent practicable, to be provided to the child.” IEPs must be updated annually at minimum as a component of the special education *Admission, Review, and Dismissal (ARD)* process must also delineate specific behavioral and instructional accommodations and modifications to include frequency, duration, and location of services (IDEA, 2004).

9. *Least Restrictive Environment (LRE)* – An instructional setting mandated by IDEA in which “to the maximum extent appropriate, children with disabilities, including children in public or private institutions or other care facilities, are educated with children who are not disabled, and that special classes, separate schooling, or other removal of children with disabilities from the regular educational environment occurs only when the nature and severity of the disability is such that education in regular classes with the use of supplementary aids, services and modifications cannot be achieved satisfactorily” (Individuals with Disabilities Education Improvement Act, 2004).

10. *Student Subpopulations*: Student ethnic and socioeconomic distributions reported on AEIS report. Students are broken down into the following ethnic subpopulations: African American, White, Hispanic, Asian/Pacific Islander and Native American. Socioeconomic distinctions include “Economically Disadvantaged” and “At-Risk.”

11. *Title I* - Title 1 students are students participating in a program authorized under Title I of the Elementary and Secondary Education Act (ESEA), which is designed to improve the academic achievement of disadvantaged students.

12. *Texas Education Agency (TEA)*: A state agency tasked with the administrative oversight of elementary and secondary public education. Its regulatory responsibilities include maintaining data collection, monitoring of compliance with state and federal mandates, determining fiscal allocations, and maintaining the statewide academic accountability system.

Instrumentation and Study Population

This study is designed to incorporate an “instrumental case study” model consistent with the “methodological triangulation” approach identified by Stake (1995) as a means of promoting increased validity and replicability. In this model the particular case is chosen as a mechanism for providing insight into a broader issue or phenomenon rather than as a means of gaining a greater understanding of the case itself. This approach is predicated in part upon contextualizing potential relationships within an instance, group, or entity of sufficient “depth” to contribute to the affirmation or refutation of pre-existing “grand generalizations.” An instrumental case study model lends itself well to this research given both the polemic nature of the current discourse surrounding autism and the degree to which the case study sample manifests the representative quality that Stake advocates. The Longhorn Independent School District was selected for case study purposes as it provides ample “depth” in diversity and prospective sample size, close resemblance to state demographic trends to strengthen study implications, and heightened

uniformity among diagnostic and staff development practices, thereby minimizing the potential impact of other district-level variables.

Longhorn ISD is a suburban public school district with an enrollment of 68,206 students as reflected in 2013-2014 Public Education Information Management System (PEIMS) data, making it the 8th largest district in the state by this measure. Its 2012-2013 Academic Excellence Indicator System (AEIS) demographic profile indicates that this enrollment is 56% Hispanic-Latino, 30% White, and 7% African-American. Students categorized as “economically disadvantaged” by TEA comprise 46% of enrollment. Contrasted versus 2006-2007 data, the initial year analyzed for the purposes of this study, enrollment among the Hispanic and “economically disadvantaged” subpopulations has increased by 10% and 7% respectively, while the White subpopulation experienced a decline of 11%. The District’s enrollment trends and current demographics mirror the population projections forecast by the State Demographer, who in a 2013 report entitled *Texas Population Projections, 2010 to 2050*, anticipates that by 2050 the population of Texas will be 24.2% White/Anglo, 7.9% African-American, and 59.1% Hispanic. Perhaps more tellingly given the research questions to be addressed in this study, these projections indicate that at least 60% of all Texas households will be non-Anglo and poorer in terms of constant 2010 dollars. The percentage of households living below the poverty line as defined by the U.S. Department of Health and Human Services is expected to increase 4%, with those headed by Hispanics and African-Americans being disproportionately affected. Comparative demographics employed in this study for Texas

and Longhorn ISD as reported in the 2012-2013 Texas Academic Performance Report are reflected in Table 1.

TABLE 1. Percentage of Student Enrollment by Subpopulation in Texas and the Longhorn ISD in San Antonio, Texas as Reflected in TAPR

Percentage of Student Enrollment by TAPR Subpopulation, 2012-2013	Texas	Longhorn ISD
Hispanic	51.3	56.1
African American	12.7	7.2
White	30.0	29.9
At-Risk	44.7	32.3
Economically Disadvantaged	60.4	46.1
English Language Learners	17.1	9.0

In examining district enrollment of students who are eligible to receive special education services specifically, PEIMS data indicates that 724 students who meet “AU” criteria were enrolled in Longhorn ISD in the 2012-2013 school year, an increase of 305 students during the period addressed in this study. Annual increases in enrollment of students with an “AU” eligibility not only counteract a continuous decline in the overall number of students receiving special education services, but also comprise a progressively greater percentage of this population as depicted in Table 2.

TABLE 2. “AU” Enrollment in Longhorn ISD as Reflected in AEIS, 2006-2007 through 2012-2013 School Years

School Year	2012	2011	2010	2009	2008	2007	2006
Total District Enrollment of Students w/ “AU” Eligibility	724	690	654	573	492	476	419
Total District Enrollment of Students w/ Sp. Ed. Eligibility	6117	6260	6532	6683	6760	7247	7674
“AU” Eligibility as Percentage of District Sp. Ed. Eligibility	11.84	11.02	10.01	8.57	7.27	6.56	5.45

Emerging research suggests that improvements in screening mechanisms can produce longitudinally stable diagnoses of ASD in students as young as 2, with level of intellectual functioning and amount of useful language acquired by 5 years of age established as among the best indicators of the likelihood of a subsequent ASD diagnosis (Risi, Lord, et al., 2008; Goldstein, Naglieri, & Williams, 2012). Therefore, this study was confined to the 46 elementary campuses in the Longhorn ISD. Of these, 19 are designated as Title 1 campuses eligible for federal funding to enhance educational outcomes for students from low-SES environments. Demographics for the 31,786 students in grades Prekindergarten –5th in 2012-2013 are representative of the district demographics collectively, with percentages of “Economically Disadvantaged” students ranging from a low of 8.1% of total enrollment to a high of 95.0%. Hispanic enrollment varied from 25.6% to 99.3%, while the African-American composition exhibited a range of 1.6% to 35%. Rates of “AU” enrollment expressed as a percentage of overall special education enrollment are depicted in Table 3. Means for each identified demographic variable differentiated by Title 1 campus eligibility are expressed in Table 4.

TABLE 3. Total Number of Longhorn ISD Elementary Students with “AU” Primary Eligibility/Campus “AU” Percentage of Special Education Enrollment by Campus Title 1 Status, 2006-2007 to 2012-2013 School Years

	2012	2011	2010	2009	2008	2007	2006
Non-Title 1 “AU” Enrollment	278	226	248	230	212	214	182
Non-Title 1 “AU” (as % of Sp. Ed. Enrollment)	16.7	12.6	13.0	11.6	10.1	9.6	8.0
Title 1 “AU” Enrollment	111	114	103	88	59	58	54
Title 1 “AU” (as % of Sp. Ed. Enrollment)	11.0	11.0	9.6	7.9	5.4	4.8	3.9

TABLE 4. Mean Longhorn ISD Elementary Student Enrollment Percentages by Subpopulation Differentiated by Campus Title 1 Status as Reported in TAPR, 2012-2013

Percentage of Student Enrollment by TAPR Subpopulation, 2012-2013	Title 1 Campuses	Non-Title 1 Campuses
“AU” Enrollment	0.9	1.4
Hispanic	71.9	46.4
African-American	10.4	4.6
White	10.3	38.6
At-Risk	40.0	21.5
Economically Disadvantaged	86.2	31.7
English Language Learners (ELL)	22.1	11.3

Only publicly available data accessible via PEIMS and AEIS was used for purposes of this study. AEIS data for each public school campus and district was published in report form by the Texas Education Agency (TEA) annually from the 1990-1991 academic year through 2011-2012, with the most recent iteration of the report containing

academic performance indicators, financial and programmatic information, and student and staff demographic data. To ensure validity, TEA compiles its demographic data from the Public Education Information Management System (PEIMS). PEIMS data is submitted from individual campuses and districts electronically at predetermined periods and subjected to periodic audit. In order to monitor the academic performance indicators mandated by TEA's accountability matrices and to ensure that funds are dispersed equitably in compliance with state and federal mandates, one component of the AEIS report is the inclusion of "subpopulation" data which categorizes numbers and percentages of students enrolled in various ethnic, linguistic, and socioeconomic categories. Pre-existing AEIS subpopulations employed for the purpose of this study, likewise delineated by percentages of campus enrollment, include Hispanic, African-American, White, Limited English Proficient, Economically Disadvantaged, and "At-Risk." Campus Title 1 membership was also analyzed, and as this designation is a nominal variable, the relative degree of campus affluence was ranked ordinally using median campus household income data by zip code from the 2000 and 2010 United States Census.

TEA's Office of Legal Services is responsible for the public dissemination of special education due process hearing outcome in accordance with federal law (20 U.S.C. §1415(h)(4)A). Pursuant to the provisions of the Family Educational Rights and Privacy Act of 1974 (FERPA), potentially identifying data to include student name and grade, campus name and level, and names of district personnel are redacted. Findings are published via electronic database and are organized by district name and docket number

and detail the allegations and relief sought by the petitioner, the procedural history of the case, the Hearing Officer's findings of fact, any pertinent discussion to include legal precedent, and a summation of the Hearing Officer's conclusions of law and subsequent orders. Descriptive analysis included an examination of cases which directly involved an "AU" eligibility issue (whether one of an alleged failure to identify or failure to provide an "appropriate" IEP once identified), whether the Hearing Officer found wholly for district, wholly for parent/student, or a combination thereof, and the demographic and enrollment composition of the districts in question as reflected in the AEIS variables detailed above.

Data Analysis

Numbers and percentages of students meeting "AU" eligibility criteria at the 46 Longhorn ISD elementary schools were compiled from PEIMS data using accepted techniques for quantitative data collection as identified by Gall, Borg, and Gall (1996). These findings were then compared to numbers and percentages of enrollment of students among the subpopulations identified above on each respective campus from the 2006-2007 academic year to 2013-2014. During this period, Longhorn ISD opened 4 additional elementary campuses in response to population growth. Enrollment numbers were reported by student's home campus of record to mitigate the impact of any potential variances resulting from a student's attending a campus other than his or her own due to administrative transfers, state-mandated school choice provisions, magnet programs, or other campus-level variables which

might knowingly result in a disproportionate enrollment of students with ASD at a particular site.

Research questions were analyzed using multiple algorithms to calculate correlation coefficients including the Chi-Squared Test for Equality of Two Proportions and the Pearson Product Moment Correlation Coefficient. In each instance the intent was to examine whether there was a significant relationship between the enrollment of students meeting TEA eligibility criteria for “AU” expressed as percentage of enrollment and demographic variables of Hispanic, African-American, White, “economically disadvantaged,” “At-Risk,” and Limited English Proficient likewise expressed. The specific elementary campus was designated as the unit of analysis given that student-level data is masked by TEA to maintain FERPA compliance. The descriptive analysis includes mean scores, standard deviations, frequencies, and correlation measures. The level of significance was set at .05 or a 95% confidence level. Given that many of the variables to be analyzed are not normally distributed, correlations were also calculated using Spearman’s Rank Order correlation coefficient.

In addition to an analysis of r and r_s values for tests of statistical significance, this study also examined effect size results in order to better assess the practical significance of the study findings. Incorporating these results is intended to facilitate comparisons between this study and future research and promote additional opportunities for meta-analysis. Effect sizes were reported using Cohen’s d , an output which he defines in part as “... the degree to which the phenomenon is present in the population...” (Cohen, 1988). Olejnik and Algina (2000) note that “statistical significance testing does not

imply meaningfulness” and they and other practitioners reiterate the importance of including discussions of magnitude which will allow readers not only to interpret the results of a specific study, but also to compare results between and among studies (Fan, 2001; Baugh, 2002).

For question one, “Do statistically and practically significant relationships exist between campus ethnicity and/or socioeconomic demographics as delineated by AEIS/TAPR subpopulation percentages and campus ASD enrollment percentages in the Longhorn Independent School District for the identified period?” numbers and percentages of students enrolled meeting TEA “AU” eligibility criteria were compiled for each campus for each successive school year from 2006-2007 through 2012-2013. These numbers were compared to numbers and percentages of students simultaneously enrollment in the subpopulations of Hispanic, African-American, White, Economically Disadvantaged, At-Risk, and ELL. As the campus was the unit of analysis, Title 1 membership and campus affluence as dictated by mean household income per campus zip code as reflected in U.S. Census data were also incorporated as ordinal variables. Statistical correlations were analyzed using Chi-Squared Test for Equality of Two Proportions and the Pearson Product Moment Correlation Coefficient. Nonparametric analysis incorporated the use of Spearman’s Rank Order Coefficient. Practical significance and effect size was evaluated using the Cohen’s *d* algorithm.

For question two, “What are the descriptive characteristics of due process hearings filed on behalf of students with ASD for the identified period?,” 138 due process hearing transcripts with original filing dates from the 2009-2010 school year (the earliest year

retroactively available) through 2013-2014 and posted in the online database of the Texas Education Agency's Office of Legal Services were analyzed using a priori coding to indicate participating district, preexisting presence of an "AU" eligibility for the student on whose behalf the filing was made, issues of IEP propriety or the inclusion of an "AU" qualifying condition as a component of requested relief, and demographic and socioeconomic characteristics of the participating district.

For question three, "Do statistically and practically significant relationships exist between district ethnicity and/or socioeconomic demographics as delineated by AEIS/TAPR subpopulation percentages and district ASD enrollment percentages in those districts involved in a due process hearing involving ASD during the identified period?" due process hearings involving issues of "AU" eligibility criteria meeting were individually analyzed for each successive school year from 2009-2010 through 2013-2014. Numbers of hearings were compared to numbers and percentages of district-level student enrollments in the subpopulations of Hispanic, African-American, White, Economically Disadvantaged, At-Risk, and ELL. As the district was the unit of analysis, relative affluence as defined by PEIMS Tax Year State Certified Property Value by Pupil was also incorporated as an ordinal variable. Statistical correlations were analyzed using Chi-Squared Test for Equality of Two Proportions and the Pearson Product Moment Correlation Coefficient. Nonparametric analysis utilized Spearman's Rank Order Coefficient. Practical significance and effect size were evaluated using the Cohen's *d* algorithm.

Chapter IV of this study presents the findings in detail with a summary of conclusions discussed in Chapter V.

CHAPTER IV

ANALYSIS OF DATA

Introduction

This study was conducted to examine the existence, strength, and direction of any potential correlations among campus rates of ASD enrollment, expressed as a percentage of enrolled students whose primary Texas Education Agency (TEA) special education eligibility criteria is autism (“AU”), and other identified ethnic and socioeconomic enrollment percentages for preexisting subpopulations delineated in TEA’s Academic Excellence Indicator System (AEIS) and Texas Assessment of Academic Progress (TAPR) reports for each respective elementary campus in the Longhorn Independent School District in San Antonio, Texas. It subsequently analyzed at the district level the presence of any relationship between these categorical variables and the frequency of due process filings versus the district alleging failure to correctly identify and/or provide programming for students with ASD as mandated by IDEA. The analytics provided in Chapter IV are derived from a compilation of campus and district-level student enrollment and demographic data as reflected in the AEIS and TAPR reports for the identified study period. Data for which the campus is the unit of measure was analyzed for successive school years from 2006-2007, the year immediately following the reauthorization of the IDEA in 2005, to 2013-2014, the most current annual data available via the TAPR profile report. This yielded a sample size (n) of 346. Data for 42 campuses is available for the entirety of the study period. 2 additional campuses opened in the both the 2010-2011 and 2012-2013 academic years respectively as a result of the

passage of bond issues necessitated by population growth. Student enrollment categorized by subpopulation and expressed as a percentage included predetermined AEIS and TAPR subpopulations of *Economically Disadvantaged*, *African American (AA)*, *Hispanic*, *White*, and *At Risk*. AEIS and TAPR also include reporting categories for mobility rate, defined as the number of students in attendance for at least 83% of the school year divided by number of students enrolled at any point during the identified year, and the percentage of ELL learners. To provide an additional measure of a potential relationship between socioeconomic status and prevalence of “AU” diagnoses, the mean household income for the zip code of each respective campus is reflected as an ordinal variable. A correlational analysis was performed to determine the existence and relative strength of any relationship between rate of enrollment of students meeting TEA eligibility criteria for “AU” and rates of enrollment among the subpopulations detailed above. Because these enrollments were unlikely to be normally distributed and campus level-data compiled also included an examination of ranked factors, hypothesis testing also incorporated nonparametric analysis via Spearman’s Rank Order Coefficient. Measures of potential effect size were derived by applying a Cohen’s *d* value to each Pearson correlation coefficient *r*. Descriptive statistics for ethnicity subpopulations examined during the study period are reflected in Table 5. Those for socioeconomic and other identified subpopulations analyzed are displayed in Table 6. An overall mean increase of .475% in “AU” enrollment is equivalent to an additional 305 students meeting this eligibility criteria from the 2006-2007 academic year to 2013-2014.

TABLE 5. Comparison of Range, Mean, Standard Deviation, and Variance of Elementary Campus Student Enrollment Percentages in Longhorn ISD by Subpopulation as Reported in AEIS/TAPR Reports, 2006-2007 vs. 2013-2014

Academic Year	N	Min.	Max.	Mean	Std. Deviation	Variance	
2006-2007	“AU” %	42	0.00%	2.87%	0.76%	0.53%	.281
	White %	42	4.30%	72.90%	36.81%	21.03%	442.10
	Hispanic %	42	21.10%	93.60%	48.99%	20.61%	424.83
	AA %	42	0.30%	40.30%	10.85%	9.56%	91.49
	Valid N (listwise)	42					
2013-2014	“AU” %	46	0.27%	2.40%	1.25%	0.52%	.27
	White %	46	2.40%	59.30%	27.37%	16.53%	273.32
	Hispanic %	46	31.60%	94.70%	58.87%	17.92%	321.11
	AA %	46	0.40%	28.20%	7.08%	6.19%	38.30
	Valid N (listwise)	46					

TABLE 6. Comparison of Range, Mean, Standard Deviation, and Variance of Elementary Campus Student Enrollment Percentages in Longhorn ISD by Subpopulation as Reported in AEIS/TAPR Reports, 2006-2007 vs. 2013-2014

Academic Year	N	Min.	Max.	Mean	Std. Deviation	Variance	
2006-2007	“AU” %	42	0.00%	2.87%	0.76%	0.53%	.28
	Eco. Dis. %	42	3.00%	90.90%	49.48%	30.31%	918.76
	At Risk %	42	10.11%	66.90%	28.41%	15.65%	245.06
	ELL %	42	0.00%	43.80%	10.23%	13.48%	181.67

TABLE 6: Continued

	N	Min.	Max.	Mean	Std. Deviation	Variance
2013-						
2014						

Statistical Analysis of Research Questions

Research Question One

Do statistically and practically significant relationships exist between campus ethnicity and/or socioeconomic demographics as delineated by AEIS/TAPR subpopulation percentages and campus ASD enrollment percentages in the Longhorn Independent School District for the identified period?

The purpose of this question was to assess the presence and magnitude of any prospective correlation between the rate of students with a TEA “AU” eligibility on a given campus and the ethnic and socioeconomic profile of that campus, especially given aforementioned increases in enrollment of students with ASD and changes in student demographics. Ethnicity in this study is codified by the predetermined AEIS and TAPR subpopulations of *African American*, *Hispanic*, and *White* expressed as a percentage of overall student enrollment. Socioeconomic and other quantitative variables employed included *Economically Disadvantaged*, *At Risk*, and *ELL* and were similarly expressed. Relative affluence was also incorporated as an ordinal variable by using median campus household income data by affected campus zip code

from 2010 United States Census. A within groups design analyzed student demographic and socioeconomic data at these campuses and was compiled for each operating elementary campus in the Longhorn Independent School District for the study period. A mean of 44 campuses over the seven year study period resulted in a sample size of $n = 346$. Degrees of freedom (df) for the critical values of the correlation coefficients were interpreted at 344. The level of significance was set at .05 or a 95% confidence interval, with results also reported at .01 or a 99% interval.

The mean for the district-wide percentage of “AU” enrollment increased from .78% to 1.50% from 2006-2007 to the 2013-2014 academic year. The mean “AU” enrollment percentage for Title 1 campuses was .9%, with the non-Title campuses reflecting a mean of 1.5%. The range for Title 1 campuses was from .27% to 1.84%, while non-Title 1 campus “AU” enrollments ranged from .58% to 2.40%. Population variances were .270% and .277% respectively. Although these variances are almost identical, 8 of the 10 campuses with the highest “AU” enrollment percentages as reported to PEIMS are non-Title 1 campuses.

Question one first assesses the existence and strength of any correlation between percentage of campus “AU” enrollment and percentage of campus enrollment by ethnicity to include identified student subpopulations as follows: African-American, Hispanic, and White. A Pearson Correlation Coefficient was used to determine the degree of covariance between these variables. Table 7 contains the data of that analysis.

TABLE 7. Pearson Product Moment Correlations, Significance, and *n* (346) Measuring Degree of Covariance between “AU” Student Enrollment Percentage and Student Enrollment Percentage by Ethnicity Subpopulation in Longhorn ISD as Reported in AEIS/TAPR Reports, 2006-2007 through 2013-2014

		“AU” %	White %	Hispanic %	AA %
“AU” %	Pearson Correlation	1	.381**	-.345**	-.218**
	Sig. (2-tailed)		.000	.000	.000
	N	346	346	346	346
White %	Pearson Correlation	.381**	1	-.896**	-.356**
	Sig. (2-tailed)	.000		.000	.000
	N	346	346	346	346
Hispanic %	Pearson Correlation	-.345**	-.896**	1	.002
	Sig. (2-tailed)	.000	.000		.972
	N	346	346	346	346
AA %	Pearson Correlation	-.218**	-.356**	.002	1
	Sig. (2-tailed)	.000	.000	.972	
	N	346	346	346	346

The level of significance for each potential correlation between percentage of campus “AU” enrollment and percentage of campus enrollment by ethnicity was reported as 0.00. This was less than the alpha level of 0.05. As a result, the decision was made to reject the null hypotheses of no difference in each instance. For a $df = n-2$ of ≥ 100 as reflected in Table VI of the *Statistical Tables for Biological, Agricultural, & Medical Research* (Fisher & Yates, 1974), an *r* value of .254 or greater is significant at the .01 level for a two-tailed test. Accordingly, a statistically significant relationship exists between the

percentage of “AU” enrollment and the percentage of enrollment for each predetermined subpopulation. The strongest positive correlation exists between percentage of “AU” enrollment and the percentage of White enrollment on Longhorn ISD elementary campuses, $r(344) = .38, p < .01$. There is a statistically significant negative correlation between percentage of “AU” enrollment and Hispanic and African-American enrollments on Longhorn ISD elementary campuses, $r(344) = -.35, p < .01$ and $r(344) = -.22, p < .01$ respectively.

When the nonparametric Spearman Rank Order Correlation coefficient is applied, the results indicate that there is a statistically significant positive relationship between percentage of “AU” campus enrollment and the percentage of White enrollment ($r_s [346] = .40, p < .01$). This correlation is based on the values listed in the *Critical Values for the Spearman Correlation* table published by the *Journal of the American Statistical Association* (1972). The Spearman’s rho r_s also reveals a statistically significant negative relationship between percentage of “AU” campus enrollment and percentage of Hispanic enrollment ($r_s [346] = -.36, p < .01$). The r_s value for the relationship between percentage of “AU” campus enrollment and percentage likewise exhibits a statistically significant negative correlation ($r_s [346] = -.20, p < .05$). These results are depicted in Table 8.

TABLE 8. Spearman Rank Order Correlations, Significance, and *n* (346) Measuring Degree of Covariance between “AU” Student Enrollment Percentage and Student Enrollment Percentage by Ethnicity Subpopulation in Longhorn ISD as Reported in AEIS/TAPR Reports, 2006-2007 through 2013-2014

		“AU” %	Hispanic %	White %	AA %
Spearman's ρ	Correlation Coefficient	1.000	-.355**	.404**	-.199**
	“AU” %				
	Sig. (2-tailed)	.000	.000	.000	.000
	N	346	346	346	346
	Correlation Coefficient	-.355**	1.000	-.920**	.179**
	Hispanic %				
	Sig. (2-tailed)	.000	.000	.000	.001
	N	346	346	346	346
	Correlation Coefficient	.404**	-.920**	1.000	-.348**
	White %				
	Sig. (2-tailed)	.000	.000	.000	.000
	N	346	346	346	346
Correlation Coefficient	-.199**	.179**	-.348**	1.000	
AA %					
Sig. (2-tailed)	.000	.001	.000	.000	
N	346	346	346	346	

The Pearson *r* correlation coefficients in Table 7 above were then converted to effect sizes to contextualize and assess the magnitude of the effects. Cohen (1988) developed criteria for interpreting effect sizes to facilitate comparisons of practical significance with other behavioral science research as depicted in Table 9.

TABLE 9. Thresholds for Interpreting Effect Size (Cohen, 1988)

Test	Relevant Effect Size	Effect Size Threshold = Small	Effect Size Threshold = Medium	Effect Size Threshold = Large	Effect Size Threshold = Very Large
Standardized Mean Difference	$d, \Delta,$ Hedges' g	.20	.50	.80	1.30
Correlation	r	.10	.30	.50	.70

Using the conversion algorithm published by Ellis (2009) resulted in a Cohen's d effect size measure of .82 for the original correlation coefficient between "AU" and White percentages of campus enrollment. As reflected in Table 9 above, this represents a "large" measure of practical significance. The effect size for the relationship between "AU" percentage of campus enrollment and that of the Hispanic subpopulation was calculated at -.74 or a "medium" measure of effect size, while the Cohen's d measure of the strength of the correlation "AU" and African-American enrollment percentages of -.45 equates to a "small" effect size threshold (Cohen, 1988).

Question one also examined existence and strength of any correlation between percentage of campus "AU" enrollment and percentage of other identified AEIS and TAPR subpopulation enrollment to include: Economically Disadvantaged, At-Risk, and English-Language Learners. Campus Title 1 status was also recorded. However, given that an individual campus's Title 1 designation is a nominal variable, the relative scale of campus affluence was evaluated by employing mean household income per campus zip code as reflected in 2010 U.S. Census data as an additional

ordinal variable. A Pearson Correlation Coefficient was used to determine the degree of covariance between these variables. Table 10 contains the data of that analysis.

TABLE 10. Pearson Product Moment Correlations, Significance, and *n* (346) Measuring Degree of Covariance between “AU” Student Enrollment Percentage and Student Enrollment Percentage by Other Subpopulation in Longhorn ISD as Reported in AEIS/TAPR Reports, 2006-2007 through 2013-2014

		“AU” %	Eco. Dis. %	Zip Census \$	At Risk %	ELL %
“AU” %	Pearson Correlation	1	-.387**	.395**	-.425**	-.307**
	Sig. (2-tailed)		.000	.000	.000	.000
	N	346	346	346	346	300
Eco. Dis. %	Pearson Correlation	-.387**	1	-.855**	.767**	.525**
	Sig. (2-tailed)	.000		.000	.000	.000
	N	346	346	346	346	300
Zip Census \$	Pearson Correlation	.395**	-.855**	1	-.605**	-.345**
	Sig. (2-tailed)	.000	.000		.000	.000
	N	346	346	346	346	300
At Risk %	Pearson Correlation	-.425**	.767**	-.605**	1	.874**
	Sig. (2-tailed)	.000	.000	.000		.000
	N	346	346	346	346	300
ELL %	Pearson Correlation	-.307**	.525**	-.345**	.874**	1
	Sig. (2-tailed)	.000	.000	.000	.000	
	N	300	300	300	300	300

The level of significance for the each potential correlation between campus percentage of “AU” enrollment and percentage of other identified subpopulation enrollment was reported as 0.00. This was less than the alpha level of 0.05. As a result, the decision was made to reject the null hypotheses of no difference in each instance. For a $df = n-2$ of ≥ 100 as reflected in Table VI of the *Statistical Tables for Biological, Agricultural, & Medical Research* (Fisher & Yates, 1974), an r value of .254 or greater is significant at the .01 level for a two-tailed test. Accordingly, a statistically significant relationship exists between the percentage of “AU” enrollment and the percentage of enrollment for each subpopulation depicted above. The sole statistically significant positive correlation exists between percentage of “AU” campus enrollment and the median household income by zip code on Longhorn ISD elementary campuses, $r(344) = .40, p < .01$. The strongest statistically significant negative correlation among the identified variables exists between percentage of “AU” enrollment and percentage of *At-Risk* enrollment, $r(344) = -.43, p < .01$. Additional statistically significant relationships exist between percentage of “AU” campus enrollment and percentage of *Economically Disadvantaged* and *ELL* enrollments on Longhorn ISD elementary campuses, $r(344) = -.39, p < .01$ and $r(344) = -.31, p < .01$ respectively.

When the nonparametric Spearman Rank Order Correlation coefficient is applied, the results indicate that there is a statistically significant positive relationship between percentage of “AU” campus enrollment and the percentage of White enrollment ($r_s [346] = .40, p < .01$). This correlation is based on the values listed in the *Critical Values for the Spearman Correlation* table published by the *Journal of the American Statistical*

Association (1972). The Spearman's rho r_s also reveals a statistically significant negative relationship between percentage of "AU" campus enrollment and percentage of Hispanic enrollment ($r_s [346] = -.36, p < .01$). The r_s value for the relationship between percentage of "AU" campus enrollment and percentage likewise exhibits a statistically significant negative correlation ($r_s [346] = -.20, p < .05$). These results are depicted in Table 11.

**TABLE 11. Spearman Rank Order Correlations, Significance, and *n* (346)
Measuring Degree of Covariance between “AU” Student Enrollment Percentage
and Student Enrollment Percentage by Other Subpopulation in Longhorn ISD as
Reported in AEIS/TAPR Reports, 2006-2007 through 2013-2014**

		“AU” %	Eco. Dis. %	Zip Census \$	At Risk %	ELL %
Spearman's ρ	“AU” %					
	Correlation Coefficient	1.000	-.401**	.414**	-.377**	-.218**
	Sig. (2-tailed)	.000	.000	.000	.000	.000
	N	346	346	346	346	346
	Eco. Dis. %					
	Correlation Coefficient	-.401**	1.000	-.836**	.798**	.478**
	Sig. (2-tailed)	.000	.000	.000	.000	.000
	N	346	346	346	346	346
	Zip Census \$					
	Correlation Coefficient	.414**	-.836**	1.000	-.622**	-.293**
	Sig. (2-tailed)	.000	.000	.000	.000	.000
	N	346	346	346	346	346
	At Risk %					
	Correlation Coefficient	-.377**	.798**	-.622**	1.000	.727**
	Sig. (2-tailed)	.000	.000	.000	.000	.000
	N	346	346	346	346	346
	ELL %					
	Correlation Coefficient	-.218**	.478**	-.293**	.727**	1.000
Sig. (2-tailed)	.000	.000	.000	.000	.000	
N	346	346	346	346	346	

Calculations for Cohen's d for the above variables yielded the largest effect size for the correlation between the "AU" percentage of campus enrollment and the percentage of At-Risk enrollment at $d = -.94$. As reflected in Table 9 above, this represents a "large" measure of practical significance. The Cohen's d measure for the relationship between the percentage of "AU" campus enrollment and the median household income by zip code on Longhorn ISD elementary campuses was reported at $d = .86$, also a "large" effect size. The effect size for the relationship between "AU" percentage of campus enrollment and that of the percent of Economically Disadvantaged subpopulation enrollment was calculated at $d = -.84$, another "large" measure of practical significance. Lastly, the measure of effect size for the relationship between the "AU" percentage of campus enrollment and the ELL campus enrollment percentages equates to a "medium" effect size threshold ($d = -.45$).

Research Question Two

What are the descriptive characteristics of due process hearings filed on behalf of students with ASD for the identified period?

The purpose of this question was to anecdotally analyze and code special education due process hearings filed with the Texas Education Agency's Office of Legal Services for the duration of the study period to determine the number of due process hearings filed on behalf of students with ASD or those students for whom the lack of an "AU" eligibility was among the issues being contested. A priori codes employed were participating district, preexisting presence of an "AU" eligibility for the student on whose behalf the filing was made, issues of IEP propriety or the inclusion of an "AU" qualifying condition as a component of requested relief, and demographic and socioeconomic

characteristics of the participating district as reflected in the district’s AEIS or TAPR report, as applicable, for the affected year. 138 available due process hearings were analyzed for the identified study period. Of these, 61 were coded as involving Autism Spectrum Disorder (ASD) in some capacity. In order to be coded as such, the hearing had to contest either the impropriety of programming and related services provided to a student with an existing “AU” eligibility or the inadequacy of assessment for a student whose special education eligibility did not include a prior “AU” qualification. This distinction was employed to accurately assess the number of due process hearings generated by an ASD issue since by statute a due process hearing can address multiple requests for injunctive and/or declaratory relief. 55 of the hearings addressed a pre-existing eligibility, with the most commonly contested issues being the propriety of the current IEP, a request for supplemental or related services (to include provision by private-sector entities), and issues of LRE and service delivery. The remaining hearing decisions were rendered in response to evaluation issues, with the most frequently recurring request for relief entailing the provision of an *Independent Educational Evaluation* (IEE) to reassess a prior disqualification for “AU” eligibility.

These 61 hearings represented 44.2% of all due process filings despite the fact that students for whom “AU” is their primary special education qualifying condition comprised 9.0% of the special education population for the study period. The PEIMS *Students Receiving Special Education Services by Primary Disability* report for 2013-2014, the most current iteration available, lists the percentage of special education students with a *Primary Disability* of “AU” as 10.2%. In addition to “AU,” primary

disabilities include *Emotional Disturbance (ED)*, *Intellectual Disability (ID)*, *Learning Disability (LD)*, *Non-Categorical Early Childhood (NCEC)*, *Orthopedic Impairment (OI)*, *Other Health Impairment (OHI)*, *Speech or Language Impairment (SI)*, *Traumatic Brain Injury (TBI)*, and *Visual Impairment (VI)*. Statewide totals for each Primary Disability as reflected in this report are listed in Table 12.

TABLE 12. Students Receiving Special Education Services by Primary Disability as Reported to PEIMS, 2010-2011 vs. 2013-2014

Primary Disability	AU	OI	OHI	VI	ID	ED	LD	SI	TBI	NCEC
2013-2014 Total Student Population	45,404	4,176	57,440	4,013	40,537	25,669	163,662	88,910	1,364	5,389
2010-2011 Total Student Population	33,685	4,636	56,032	4,168	34,242	27,501	179,875	89,418	1,481	4,439
Difference in Population	11,719	-460	1,138	-155	-6,295	-1,832	-16,213	-508	-117	950

Given the growth in the number of students with an “AU” eligibility when compared to other eligibility categories and the disproportionate rate at which due process hearings are being conducted to address some aspect of an “AU” assessment, hearing decisions were further coded by participating district to better assess critical theory implications of potential correlations between number of due process hearings and district-level ethnicity and/or socioeconomic variables. Coding in this manner is necessitated by the fact that TEA masks all student and campus-level identifiers in due process hearing transcripts in order to ensure the requisite FERPA compliance. The 61 transcripts utilized originated in 43 districts, with 6 districts being represented multiple times for separate issues. In such

instances, separate demographic data coded for the district was compiled for each academic year in which a hearing decision was rendered. This yielded a population size (N) = 58 which was subsequently analyzed for prospective correlations as stipulated in research question three.

Research Question Three

Do statistically and practically significant relationships exist between district ethnicity and/or socioeconomic demographics as delineated by AEIS subpopulation percentages and district ASD enrollment percentages in those districts involved in a due process hearing involving ASD during the identified period?

The purpose of this question was to assess the presence and magnitude of any prospective correlation between the per capita rate of due process filings made on behalf of students with a preexisting or contested TEA “AU” eligibility in a participating district and the ethnic and socioeconomic profile of that district. The per capita due process rate was also utilized as an independent variable in addition to the district percentage of “AU” enrollment in an effort to better quantify the degree to which propensity for litigation under IDEA and access to representation are potentially impacted by district demographics. Ethnicity in this question is codified by the predetermined AEIS and TAPR subpopulations of African American, Hispanic, and White expressed as a percentage of overall student enrollment. Socioeconomic and other quantitative variables employed included Economically Disadvantaged, At Risk, and ELL and were similarly expressed. Relative affluence was also incorporated as an ordinal variable as delineated

by each district's respective PEIMS Tax Year State Certified Property Value per Pupil for each year in which a due process hearing occurred. A within groups design analyzed district-level demographic and socioeconomic data and was compiled for the population size (N) = 58 of districts participating in a due process hearing for the study period as identified in question 2 above. Degrees of freedom (*df*) for the critical values of the correlation coefficients were interpreted at 56. The level of significance was set at .05 or a 95% confidence interval, with results also reported at .01 or a 99% interval.

The mean for the percentage of "AU" enrollment of .92% among districts participating in due process hearings from the 2009-2010 through the 2013-2014 academic year incorporates a growth rate of 3.1% or 11,719 students. This is contrasted versus a 1.9% decline in special education enrollment collectively during the same period, to include a reduction of 16,213 students who receive special education services based on a diagnosed Learning Disability, the most populous eligibility category. This reduction is a continuation of declining special education enrollments statewide and reiterates the disproportionate changes in rate of "AU" eligibility. A total of 48,050 fewer students are served in special education since the 2005-2006 academic year, the first since the reauthorization of IDEA in 2004. The ranges of subpopulation memberships depicted in Table 13 are indicative of the demographic and socioeconomic diversity among districts and strengthen the study implications of the results obtained from the case study district given similar variances. Of particular note is the disparity of almost \$1,000,000 in terms of PEIMS Tax Year State Certified Property Value per Pupil between the most and least affluent districts participating in due process hearings. Given

the ongoing ambiguity surrounding the outcome of the current school finance litigation, this inequity is poised to have particular ramifications for lower-SES districts attempting to maintain consistent compliance with legal mandates in the face of uncertain funding and evolving demography.

TABLE 13. Comparison of Range, Mean, Standard Deviation, and Variance of Student Enrollment Percentages by Subpopulation in Districts Participating in “AU” Due Process Hearings, 2009-2010 through 2013-2014

	N	Min.	Max.	Mean	Std. Deviation	Variance
“AU” %	58	0.23%	1.70%	0.92%	0.32%	.000%
White %	58	3.70%	80.20%	37.53%	23.11%	533.92%
Hispanic %	58	6.50%	90.70%	37.78%	22.03%	485.44%
AA %	58	0.00%	78.00%	17.86	17.81	317.44%
Eco. Dis. %	58	21.70%	91.40%	54.56%	20.01%	400.53%
Valuation \$	58	115,846	1,019,993	355,482	154,982	240,196,227
At Risk %	58	21.20%	70.10%	41.17%	12.94%	167.55%
ELL %	58	1.40%	40.40%	11.34%	9.30%	84.69%

Question three first assesses the existence, strength and direction of any correlation between district “AU” enrollment percentage and ethnicity to include previously identified student subpopulations as follows: African-American, Hispanic, and White. A Pearson Correlation Coefficient was used to determine the degree of covariance between these variables. Table 14 contains the data of that analysis.

TABLE 14. Pearson Product Moment Correlations, Significance, and *n* (58) Measuring Degree of Covariance between “AU” Student Enrollment Percentage and Student Enrollment Percentage by Ethnicity Subpopulation in Districts Participating in “AU” Due Process Hearings, 2009-2010 through 2013-2014

		“AU” %	White %	Hispanic %	AA %
“AU” %	Pearson Correlation	1	.072	-.425**	.284*
	Sig. (2-tailed)		.589	.001	.031
	N	58	58	58	58
White %	Pearson Correlation	.072	1	-.661**	-.524**
	Sig. (2-tailed)	.589		.000	.000
	N	58	58	58	58
Hispanic %	Pearson Correlation	-.425**	-.661**	1	-.236
	Sig. (2-tailed)	.001	.000		.074
	N	58	58	58	58
AA %	Pearson Correlation	-.284*	-.236	-.524**	1
	Sig. (2-tailed)	.031	.074	.000	
	N	58	58	58	58

The level of significance for a potential correlation between district percentage of “AU” enrollment and district percentage of White enrollment was reported as 0.72. This was greater than the alpha level of 0.05, resulting in a failure to reject the null hypotheses of no difference. The level of significance for the relationship between district percentage of “AU” enrollment and African-American enrollment was calculated at .03, reflecting a correlation that is significant at the .05 level. For a $df = n-2$ of ≥ 50 as

reflected in Table VI of the *Statistical Tables for Biological, Agricultural, & Medical Research* (Fisher & Yates, 1974), an r value of .273 or greater is significant at the .05 level for a two-tailed test. Accordingly, a statistically significant relationship exists between the percentage of district “AU” enrollment and the percentage of district enrollment for the African-American subpopulation, $r(56) = .28, p < .05$. The most significant correlation in terms of ethnicity at the district level is the negative relationship between percentage of a district’s “AU” enrollment and its percentage of Hispanic enrollment, $r(56) = -.43, p < .01$.

Nonparametric results returned by employing the Spearman Rank Order Correlation coefficient similarly suggest that there is a statistically significant negative relationship between percentage of district “AU” enrollment and the percentage of district Hispanic enrollment ($r_s [58] = -.41, p < .01$). District-level Spearman correlations, like those previously reported for Longhorn ISD as the case study district, are based on the values listed in the *Critical Values for the Spearman Correlation* table published by the *Journal of the American Statistical Association* (1972). The Spearman’s ρr_s also reveals a statistically significant positive relationship between percentage of district “AU” district enrollment and percentage of district Hispanic enrollment, $r_s(58) = .29, p < .05$. The initial failure to reject the null hypothesis of no relationship between the district percentage of “AU” enrollment and district percentage of White enrollment is further substantiated by a lack of significance when employing the Spearman correlation, $r_s(58) = .120, p = .589$. These results are depicted in Table 15.

TABLE 15. Spearman Rank Order Correlations, Significance, and *n* (58) Measuring Degree of Covariance between “AU” Student Enrollment Percentage and Student Enrollment Percentage by Ethnicity Subpopulation in Districts Participating in “AU” Due Process Hearings, 2009-2010 through 2013-2014

		“AU” %	Hispanic %	White %	AA %	
Spearman's ρ	Correlation Coefficient	1.000	-.414**	.120	.293*	
	“AU” %	Sig. (2-tailed)	.000	.001	.371	.026
		N	58	58	58	58
	Correlation Coefficient	-.414**	1.000	-.623**	-.130	
	Hispanic %	Sig. (2-tailed)	.001	.000	.000	.332
		N	58	58	58	58
	Correlation Coefficient	.120	-.623**	1.000	-.488**	
	White %	Sig. (2-tailed)	.371	.000	.000	.000
		N	58	58	58	58
	Correlation Coefficient	.293*	-.130	-.488**	1.000	
	AA %	Sig. (2-tailed)	.026	.332	.000	.000
		N	58	58	58	58

The Pearson *r* correlation coefficients in Table 15 above were also converted to an effect size to emphasize the respective size of the difference relative to those results obtained in research question 1. The threshold criteria for the magnitude of effect depicted in Table 9 previously were again utilized, as was Ellis’ formula for converting a Pearson *r* correlation coefficient into a Cohen’s *d* measure of practical significance.

The largest Cohen's d measure resulting from these calculations was obtained for the significance of the relationship between "AU" and Hispanic percentages of district enrollment ($d = -.94$). As depicted in Table 9 on p. 61, this measure represents a "large" measure of practical significance. The effect size for the relationship between "AU" percentage of district enrollment and the percentage of district enrollment for the African-American subpopulation ($d = -.59$) returns a "medium" measure of effect size, while the measure of the effect size for the correlation between "AU" and White district enrollment percentages ($d = .14$) is indicative of a "small" level of practical significance (Cohen, 1988).

Research question three then examined the existence, strength, and direction of any correlation between district "AU" enrollment percentage and other preexisting identified AEIS and TAPR subpopulations to include: Economically Disadvantaged, At-Risk, and English-Language Learners. In addition, because the participating campus is redacted in published due process hearing findings and the potential exits for a wide variance in the percentage of Economically Disadvantaged enrollment by campus depending on the socioeconomic diversity of a given district, each district's respective PEIMS Tax Year State Certified Property Value by Pupil for each year in which a due process hearing occurred was added as an additional variable measure of relative district affluence. A Pearson Correlation Coefficient was used to determine the degree of covariance between these variables. Table 16 summarizes this data.

TABLE 16. Pearson Product Moment Correlations, Significance, and *n* (58) Measuring Degree of Covariance between “AU” Student Enrollment Percentage and Student Enrollment Percentage by Other Subpopulation in Districts Participating in “AU” Due Process Hearings, 2009-2010 through 2013-2014

		“AU” %	Eco. Dis. %	\$ Valuation	At Risk %	ELL %
“AU” %	Pearson Correlation	1	-.194	.115	-.186	-.031
	Sig. (2-tailed)		.145	.388	.161	.818
	N	58	58	58	58	58
Eco. Dis. %	Pearson Correlation	-.194	1	-.174	.738**	.427**
	Sig. (2-tailed)	.145		.192	.000	.001
	N	58	58	58	58	58
\$ Valuation	Pearson Correlation	.115	-.174	1	-.246	-.130
	Sig. (2-tailed)	.000	.000		.000	.000
	N	58	58	58	58	58
At Risk %	Pearson Correlation	-.186	.738**	-.246	1	.578**
	Sig. (2-tailed)	.161	.000	.062		.000
	N	58	58	58	58	58
ELL %	Pearson Correlation	-.031	.427**	.130	.578**	1
	Sig. (2-tailed)	.818	.001	.331	.000	
	N	58	58	58	58	58

The level of significance for each potential correlation between district percentage of “AU” enrollment and district percentage of other identified subpopulation enrollment exceeded the alpha level of 0.05. Accordingly, this resulted in a failure to reject the null hypotheses of no difference in each instance. For a $df = n-2$ of ≥ 50 as reflected in Table

VI of the *Statistical Tables for Biological, Agricultural, & Medical Research* (Fisher & Yates, 1974), an r value of .273 or greater is significant at the .05 level for a two-tailed test. Therefore, a statistically significant relationship does not exist between the percentage of “AU” enrollment and the percentage of enrollment for each subpopulation depicted above. The strongest correlation is the negative relationship between percentage of district “AU” district enrollment and percentage of district Economically Disadvantaged enrollment, $r(56) = -.194, p < .145$. Expressing the independent variable as district percentage of “AU” due process hearing per capita rather than as district percentage of “AU” enrollment yields similar results, the notable exception being the existence of a statistically significant negative relationship between district percentage of “AU” due process hearings per capita and district percentage of ELL enrollment, $r(56) = -.314, p < .05$.

Nonparametric analysis using the Spearman Rank Order Correlation Coefficient returned results indicating that there is a statistically significant negative relationship between percentage of district “AU” enrollment and the percentage of district Economically Disadvantaged enrollment ($r_s [58] = .27, p < .05$). This correlation is based on the identical values listed in the *Critical Values for the Spearman Correlation* table published by the *Journal of the American Statistical Association* (1972) utilized for research question 1. The level of significance for the potential correlation between district percentage of “AU” enrollment and district percentages of At-Risk and ELL enrollment respectively exceeded the alpha level of 0.05, thereby necessitating a failure

to reject the null hypothesis of no difference in both instances. These results are depicted in Table 17.

TABLE 17. Spearman Rank Order Correlations, Significance, and *n* (58) Measuring Degree of Covariance between “AU” Student Enrollment Percentage and Student Enrollment Percentage by Other Subpopulation in Districts Participating in “AU” Due Process Hearings, 2009-2010 through 2013-2014

		“AU” %	Eco. Dis. %	\$ Valuation	At Risk %	ELL %
Spearman's ρ	“AU” %					
	Correlation Coefficient	1.000	-.273*	.005	-.207	.083
	Sig. (2-tailed)	.000	.038	.971	.120	.537
	N	58	58	58	58	58
	Eco. Dis. %					
	Correlation Coefficient	-.273*	1.000	-.082	.711**	.283*
	Sig. (2-tailed)	.038	.000	.540	.000	.031
	N	58	58	58	58	58
	\$ Valuation					
	Correlation Coefficient	.005	-.082	1.000	-.291*	.200
	Sig. (2-tailed)	.971	.540	.000	.026	.131
	N	58	58	58	58	58
At Risk %						
Correlation Coefficient	-.207	.711**	-.291*	1.000	.332*	
Sig. (2-tailed)	.120	.000	.026	.000	.011	
N	58	58	58	58	58	
ELL %						
Correlation Coefficient	.083	.283*	.200	.332*	1.000	
Sig. (2-tailed)	.537	.031	.000	.011	.000	
N	58	58	58	58	58	

Given the failure to reject the null hypothesis for these subpopulations, it was expected that Cohen's d measures for the above variables likewise did not offer high practical significance. The largest effect size was obtained for the correlation between the district percentage of "AU" enrollment and the district percentage of Economically Disadvantaged enrollment ($d = -.40$.) The effect size for the relationship between district percentage of "AU" enrollment and district PEIMS State Tax Property Value per Pupil ($d = .23$) is indicative of a "small" measure of practical significance, as is the Cohen's value ($d = -.10$) for the correlation between district percentage of "AU" enrollment and the district percentage of ELL enrollment.

Summary of Findings

This study utilized multiple bivariate correlation measures to examine the prospective relationship between the enrollment percentage of students eligible for special education services under TEA criteria for an "AU" eligibility on each campus in the Longhorn ISD and preexisting ethnic and socioeconomic subpopulations as delineated in AEIS and TAPR reports. These results were subsequently analyzed to determine the respective level of practical significance for each correlation. Analytics were performed from the 2006-2007 academic year forward to track the impact of demographic disparities among campuses and the presumptive impact of IDEA legislation on rates of "AU" eligibility.

Findings indicate that the strongest positive relationship in terms of ethnicity exists between percentage of campus "AU" enrollment and percentage of campus White enrollment. This correlation also manifested both a large measure of practical effect size independently and the largest such measure among the subpopulations tested. There

likewise exists a statistically and practically significant negative relationship between percentage of campus “AU” enrollment and percentage of campus Hispanic enrollment. Percentage of campus African-American enrollment was least strongly correlated to percentage of “AU” campus enrollment and exhibited the smallest practical significance.

In terms of socioeconomic variables, a campus’s relative affluence as delineated by the median household income for its zip code has the strongest correlation to percentage of “AU” campus enrollment. The relationship between the “AU” independent variable and the percentages of students who are economically disadvantaged and designated at-risk respectively also returned statistically and practically significant results. This finding appears consistent with the initial anecdotal observation that although the percentage of “AU” enrollment on Title 1 campuses has increased from 3.9% to 11% of cumulative special education enrollment during the identified study period, 8 of 10 campuses in Longhorn the highest per capita “AU” enrollment are non-Title 1 campuses. Further, the 5 campuses with the highest enrollment percentages of students with an “AU” eligibility are all in the top quintile of median household income by zip code.

The number of due process hearings surrounding issues of “AU” eligibility is highly disproportionate to the percentage of students receiving special education services whose primary disability is “AU.” In examining correlational data for those districts participating in a due process hearing, this study indicates multiple statistically or practically significant relationships between their percentages of “AU” enrollment and corresponding subpopulation enrollment. Although the correlation between the district percentage of “AU” enrollment and the district percentage of

White enrollment did not attain the levels of significance found at the campus level, there was a strong negative correlation between district percentages of “AU” and Hispanic enrollment similar to the one present in the examination of campus-level data. This relationship also exhibited a large measure of practical significance. A negative correlation between district percentages of “AU” and African-American enrollment was also found to have moderate practical significance. Effect sizes for Economically Disadvantaged, At-Risk, and ELL populations were determined to exhibit small magnitudes of effect.

CHAPTER V

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

The review of related literature presented in Chapter II of this study emphasized the etiology of autism and hypotheses surrounding its increasing prevalence (Volkmar, 1996; Fombonne, 2005; Leonard et al., 2010; Mahjouri & Lord, 2012; American Psychological Association, 2013), examined potential relationships between diagnostic rates of Autism Spectrum Disorder and ethnic and socioeconomic variables (Dyches, Wilder, & Sudweeks, 2004; Bhasin & Schendel, 2007; Begeer et al., 2008; Palmer et al., 2010; Fountain & Bearman, 2011), and assessed the presumptive impact that federal legislation and legal precedent (Bossey, 1995; Yell & Drasgow, 2008; Zirkel, 2011; Hill & Hill, 2011; Dicker & Bennett, 2011) have upon public school leaders in their efforts to provide legally and pedagogically “appropriate” services for the growing number of students with ASD enrolling in Texas public schools.

Among the points most evident in the literature presented in Chapter II which were subsequently replicated in this study were the propensity for racial differences to be reflected in ASD diagnostic rates (Mandell et al., 2009) and the inverse relationship between the percentage of Hispanic enrollment and rate of ASD diagnoses (Palmer et al., 2010). The statistical correlation between campus affluence (as delineated both by 2010 Census median household income by campus zip code and by the percentage of Economically Disadvantaged enrollment) and percentage of “AU” enrollment established in this study appears to corroborate research postulating the existence of a positive relationship between socioeconomic status and the prevalence rate of autism in clinical

settings (Durkin et al., 2010). Concerns raised by other researchers regarding the inherent ambiguity of “propriety” in attempts to define the parameters of a “free and appropriate public education” under IDEA (Baratan, 2008) coupled with the alleged subjectivity of the clinical assessments used to obtain a special education eligibility for autism services (Leonard et al., 2009) have done little to abate the controversy or address the potential inequities surrounding identification and instruction. Taken collectively, increased public awareness of autism, pronounced ethnic and socioeconomic shifts, and continued legal uncertainty have exacerbated the need for both additional responsiveness and additional research. Given that the 51% increase in the rate of “AU” eligibility in Texas public schools during this decade equates to an additional 11,719 newly identified students, superintendents will likely continue to confront questions regarding how students with ASD are most equitably identified and effectively instructed.

However, research examining any apparent links between issues of ethnicity and socioeconomics and their subsequent impact on rates of ASD identification localized to school district settings is limited, despite longitudinal data reflecting demonstrable growth in both the number of students in Texas public schools qualifying for special education services with an “AU” eligibility and the number of non-White and Economically Disadvantaged students these schools are expected to serve. Therefore, in addition to a synopsis of the findings of this study, this chapter also offers an analysis of implications for professional practice and recommendations for further research.

Research Question One

Do statistically and practically significant relationships exist between campus ethnicity and/or socioeconomic demographics as delineated by AEIS/TAPR subpopulation percentages and campus ASD enrollment percentages in the Longhorn Independent School District for the identified period?

The analysis of prospective correlations between the percentage of campus “AU” enrollment and percentage of other preexisting subpopulation enrollment over a seven year period for each of Longhorn ISD’s 46 elementary campuses reveals strong returns for statistical significance in multiple areas. Enrollment profiles were analyzed for the student subpopulations of African American, Hispanic, White, Economically Disadvantaged, At Risk, and ELL. The information was analyzed for each academic year from 2006-2007 through 2013-2014. Table 18 displays the subpopulations in which practically significant relationships were found and the relative magnitude of those effects.

TABLE 18. Practical Significance of Covariance between “AU” Student Enrollment Percentage and Student Enrollment Percentage of All Tested Subpopulations in Longhorn ISD as Reported in AEIS/TAPR Reports, 2006-2007 through 2013-2014

	Effect Size Threshold = Small ($d \geq .20$)	Effect Size Threshold = Medium ($d \geq .50$)	Effect Size Threshold = Large ($d \geq .80$)	Effect Size Threshold = Very Large ($d \geq 1.30$)
Positive Practical Significance			Zip Census \$ (.86) White (.82)	
Negative Practical Significance	African-American (-.45) ELL (-.45)	Hispanic (-.79)	At Risk (-.94) Eco. Dis. (-.84)	

Conclusions and Implications for Practice

The correlational analysis of campus-level data conducted in Chapter IV established statistically significant relationships between percentage of “AU” campus enrollment and each subpopulation tested. Of particular note are the strengths of the positive relationship between the relative affluence of each campus (as delineated by the aforementioned median household income variable) and the percentage of campus “AU” enrollment and that of the negative relationship between percentage of campus Economically Disadvantaged enrollment and campus “AU” enrollment. These findings support the existing literature reviewed in Chapter II regarding the presumptive impact of socioeconomics on autism diagnoses. Similarly, the inverse relationship between percentages of White and Hispanic enrollment relative to that of the “AU” population further corroborates previously cited research regarding the predictive value of the

percentage of Hispanic enrollment versus student population in specific disability categories. The effect of these results is likely to be amplified given demographic projections which portend increases in both Hispanic enrollment and in the disproportionate percentage of Hispanic and African-American students who meet the criteria for Economically Disadvantaged membership. For example, Ruble, Heflinger, Renfrew and Saunders (2005) found that when using Medicaid claims as a proxy for socioeconomic status, students with ASD were underrepresented tenfold.

The findings results from research question one should be scrutinized closely by superintendents and district leadership for issues of diagnosis and disproportionality given the disparities in “AU” eligibility evident among campus subpopulations within Longhorn ISD and the statewide trend of increased enrollment of students with ASD. Although there is abundant literature surrounding the overrepresentation of non-White students in special education, raising awareness of students who are potentially underserved may require changes in paradigm and protocol. One such avenue of exploration may be the replication of a practice currently being promoted to rectify the existence of disparate diagnostic rates in clinical health care settings. Kilbourne et al. (2006) advocate a 3-step approach to such research which entails ongoing training regarding the identification of the disparity, a study of the variables potentially contributing to disproportionate attainment rates, and the development and promotion of strategies to reduce the prevalence in the affected population. A similar examination of staff development offerings could be conducted in settings where inequitable rates of ASD identification are determined to exist. In monitoring these potential inequities,

school leaders should remain cognizant of the impact that any disparities in years of experience between the faculties of their most and least affluent campuses might have upon initial ASD diagnostic rates. Darling-Hammond (2003) documents higher staff attrition on inner-city and low-SES campuses, while Honig and Hatch (2004) discuss the importance of mitigating teacher turnover in order to the “limit depletion of institutional knowledge.”

Given the prospective impact of faculty experience and training on special education identification and provision of service, it is important to reiterate that Longhorn ISD opened an additional 4 elementary campuses during the years for which data for this study was compiled. Correlation coefficients for each dependent campus-level variable over the identified study period are depicted in Table 19. It is significant that with the exception of the African-American and median income variables, each other tested subpopulation saw the strength of its relationship to the campus percentage of “AU” enrollment increase. While potentially attributable to the existing demographics and socioeconomic of high-growth areas necessitating the construction of new schools, superintendents should also be attuned to the impact that boundary changes, housing of any magnet programs, and staffing protocols for new campuses may have on existing campuses in terms of mitigating existing disparities.

TABLE 19. Pearson Product Moment Correlations, Significance, and *n* (58) Measuring Degree of Covariance between “AU” Student Enrollment Percentage and Student Enrollment Percentage by All Subpopulations in Longhorn ISD, 2006-2007 vs. 2013-2014

Academic Year	“AU” %	White %	Hispanic %	AA %	Zip Census \$	Eco. Dis. %	At- Risk %	ELL %		
2006- 2007	“AU” %	Pearson Correlation	1	.475**	-.431**	-.258	.404**	-.454**	-.490**	-.295
		Sig. (2-tailed)		.002	.005	.104	.009	.003	.001	.062
		N	41	41	41	41	41	41	41	41
2013- 2014	“AU” %	Pearson Correlation	1	.548**	-.534**	-.135	.346*	-.498**	-.513**	-.405**
		Sig. (2-tailed)		.000	.000	.371	.019	.000	.000	.005
		N	46	46	46	46	46	46	46	46

** Correlation is significant at the .01 level (2 tailed).

*Correlation is significant at the .05 level (2 tailed).

Research Question Two

What are the descriptive characteristics of due process hearings filed on behalf of students with ASD for the identified period?

A priori coding of all 138 available due process hearing decisions obtained from the TEA’s Office of Legal Services revealed that hearings filed on behalf of students with an “AU” eligibility or those whose lack of an “AU” eligibility was being contested were overrepresented by a factor of 4 relative to the overall special education population. This analysis is consistent with the earlier findings obtained by Zirkel (2011) which revealed

that since the inclusion of “AU” as a specific eligibility under IDEA in 1990, issues surrounding autism comprised over one third of published court decisions. However, the level of “AU” due process filings in this study failed to rise to the tenfold level of overrepresentation Zirkel cites, a discrepancy which is potentially attributable to variations in the proactive use of mediation as stipulated under IDEA.

The most frequently recurring issue being challenged among the hearing decisions examined was that of IEP efficacy. Typically this controversy entailed either a request for additional related services such as Extended School Year or Applied Behavior Analysis therapy or disagreement regarding the LRE in which the student’s educational program could be adequately implemented. This finding demonstrates the continued pervasiveness of the *Rowley* decision discussed in Chapter II and its threshold of “educational benefit” as a determinant of the propriety of a Free and Appropriate Public Education. Hearing Officers found wholly or in part for the school district in the statistical majority of these cases, with those in which request for relief was partially granted in 8 cases involving inadequacy of assessment or a discernible violation of the parent participation standard mandated under IDEA.

Conclusions and Implications for Practice

Despite the proclivity of Hearing Officers to issue findings denying petitioner’s requested relief and the precedent for “legal presumption of appropriateness” ceded to districts under *Tatro v. Texas*, 703 F.2d 823 (5th Cir. 1983), the codified analysis of the due process hearings comprising this study are indicative of a portentous trend in evaluating programming for students with an “AU” eligibility. Parents’ willingness to

contest a student’s lack of “AU” eligibility as anecdotally evidenced in this study may continue to grow given the revised identification processes under the most recent iteration of the DSM, the DSM V. These hearings may also be emblematic of the process of “diagnostic substitution” described by Fombonne (2005) in part as an effort to attain a specific level of service or placement. As noted in Chapter II, for example, an “AU” eligibility immediately mandates the completion of the an autism supplement as mandated under Texas Education Code Ch. 89 § 300) to assess the need for the provision of a litany of services ranging from extended school day and school year opportunities to in-home parent training. The provision of these services appeared particularly rancorous if the parent contended that the development of the IEP was either predetermined by the campus or not achieved via consensus within the ARD. One potential quantifiable implication of this practice would be discernable growth in district and campus-level expenditures devoted to special education teachers, instructional aides, and contract service personnel versus comparable state and Region Service Center averages as reflected in TAPR reports.

Questions of “AU” eligibility may also have implications beyond mere resource allocation. Some researchers contend that the process of “diagnostic substitution” is as much a reflection of a different psychodynamic and societal paradigm as an attempt to procure a specific service. Eyal et al. (2011) contend that labels such as Emotionally Disturbed can be perceived as implicitly more limiting and fraught with negative connotation in ways that are not affiliated with an autism diagnosis, which exists upon a continuum and is therefore more inclusive and indicative of “higher functioning.”

Shattuck (2006) notes that this phenomenon has a significant precedent in special education enrollment. From 1976 to 1992 the number of students categorized as Mentally Retarded declined 41%, while the population served as Learning Disabled increased 198%. He affirms the existence of “considerable evidence” that schools deferred to an LD label when practicable as this was “increasingly seen as carrying less stigma.”

Given the ongoing media scrutiny devoted to the prevalence of autism and the due process ramifications detailed in Chapter IV, superintendents would derive particular benefit from reviewing the assessment battery employed to make determinations of “AU” eligibility in their respective districts, including the protocol for assessing incoming students with preexisting eligibility. Likewise, the process of ensuring and documenting the “opportunity to participate in a collaborative manner in developing the IEP” as mandated in Texas Education Code §89.1050 (f) merits additional examination.

Research Question Three

Do statistically and practically significant relationships exist between district ethnicity and/or socioeconomic demographics as delineated by AEIS subpopulation percentages and district ASD enrollment percentages in those districts involved in a due process hearing involving ASD during the identified period?

The analysis of prospective correlations between the percentage of district “AU” enrollment and percentage of other preexisting subpopulation enrollment over a 5 year period for each of Texas public school district participating in a due process hearing

found statistically and practically significant negative relationships between district percentages of Hispanic and African-American enrollment respectively and the district percentage of “AU” enrollment for those districts participating in a due process hearing from 2009-2010 to 2013-2014, the academic years that archived transcripts for these hearings are available. Additional student subpopulations of White, Economically Disadvantaged, At Risk, and ELL were analyzed, as was PEIMS State Property Tax Value per Pupil. No socioeconomic variable exhibited a statistically significant correlation to percentage of “AU” enrollment at the district level.

This question exhibited fewer statistically significant relationships than similar campus-level correlational calculation. This may be attributable in large part to the fact that individual campus names are redacted from the due process transcripts as an additional measure of FERPA compliance. Therefore, there is no mechanism to calculate any disparity between the demographics of the participating campus and the mean for the district itself. Table 18 displays the subpopulations tested and the relative magnitude of relationships established in terms of practical effect size.

TABLE 20. Practical Significance of Covariance between “AU” Student Enrollment Percentage and Student Enrollment Percentage of All Tested Subpopulations in Districts Participating in “AU” Due Process Hearings, 2009-2010 through 2013-2014

	Effect Size Threshold = Small ($d \geq .20$)	Effect Size Threshold = Medium ($d \geq .50$)	Effect Size Threshold = Large ($d \geq .80$)	Effect Size Threshold = Very Large ($d \geq 1.30$)
Positive Practical Significance	White (.14) PEIMS Tax \$ (.23)			
Negative Practical Significance	Eco. Dis. (-.40) ELL (-.10)	African-American (-.59)	Hispanic (-.94)	

Conclusions and Implications for Practice

Despite lacking the capacity to correlate a due process hearing to campus-level demographic data, the statistical and practical significance of the negative correlation between percentage of Hispanic enrollment and percentage of “AU” enrollment for those districts participating in due process hearings is a particularly relevant finding given the literature regarding Hispanic enrollment and its relationship to other disability categories evidenced in Chapter II (Fountain & Bearman, 2011; Palmer et al., 2009). These implications are furthered heightened when the role of the public school in the provision of social services is contextualized. For example, a 2013 *Pediatrics* study of 270 California doctors found that only one in ten was conducting the appropriate developmental screening in Spanish despite three of four reporting that in their estimation

communication or “cultural barriers” were inhibiting prospective autism diagnoses. Given the aforementioned projections from the State Demographer which predict that 59.1% of Texas residents will self-identify as Hispanic by 2050, this apparent lack of access and advocacy is critical. As a more isolated yet immediate example, Corpus Christi ISD, the district registering the largest number of due process hearings analyzed in this study, has an enrollment that is 79.3% Hispanic versus a mean of 51.8% statewide.

The issue of advocacy and equity in “AU” identification also has implications in another context. In addition to its AEIS AND TAPR demographic reports, TEA compiles student performance, placement, and disciplinary data as a component of its *Performance Based Monitoring and Assessment* (PBMAS) reports. Among the 22 indicators compiled in the 2014 PBMAS report are special education inclusion rates (indicators 9-12, delineated by percentage of general education inclusion), special education representation rates by ethnicity (indicator 17), and special education DAEP or *district alternative education placements* (indicator 21). The variance a district exhibits from the state mean is assigned a *performance level* (PL), with *PL required improvements* escalating in potential severity given both the degree and the duration of the variance. Failure to attain required improvements can trigger action ranging from self-audits to loss of accreditation. Although districts have long been acclimated to analyzing “achievement gaps” among subpopulations as a component of accountability legislation, they may not have equal facility in addressing gaps resulting from absent or incorrect assessments of special education eligibility. If, for example, Hispanic and African-American students are disproportionately served as students with an Emotional

Disturbance or Intellectual Disability (Mandell et al., 2009), they may be denied access to the “social skills supports” provided via the autism supplement mandated under Texas Education Code Ch. 89 §300 and subsequently be overrepresented in DAEP placements as a result.

Similarly, the U.S. Departments of Education and Justice via a 2014 “Dear Colleague” letter have expressed concern that “students of certain racial or ethnic groups tend to be disciplined more than their peers,” noting for example that “over 50% of students involved in school-related arrests are Hispanic or African-American.” The letter cites the completion of the Civil Rights Data Collection (CRDC), which in addition to examining disproportionate discipline in general devotes particular attention to the plight of students with disabilities by noting that

evidence of significant disparities in the use of discipline and aversive techniques for students with disabilities raises particular concern for the Departments. For example, although students served by IDEA represent 12% of students in the country, they make up 19% of students suspended in school, 20% of students receiving out-of-school suspension once, 25% of students receiving multiple out-of-school suspensions, 19% of students expelled, 23% of students referred to law enforcement, and 23% of students receiving a school-related arrest. (CRDC, 20 U.S.C. § 1232h(c).)

The letter goes on to state that potential Office of Civil Rights (OCR) investigations will be predicated in part upon whether “the school did limit or deny educational services, benefits, or opportunities to a student or group of students of a particular race”

and advocates proactive “self-monitoring” to include implementation of “modifications” to help “ameliorate the root cause(s) of these disparities.” Based on these state and federal data collections and the findings in research question three suggesting potential inequities in access, superintendents may benefit from scrutinizing not only the ethnicities of students with an “AU” eligibility, but also the subpopulation membership(s) of students who are ultimately assigned to an off-campus DAEP or placed in a setting which might constitute a real or perceived violation of the student’s LRE. Another ameliorative implication might be studies of the degree to which the composition district and campus staffs are reflective of their respective communities. Research by Madsen and Mabokela (2005) and Chemers and Murphy (1995) suggests that staffs which reflect and provide positive models of the demographic differences in a school community help maintain a “healthy school image.”

Recommendations for Practice and Further Research

For Practice

This study was designed to contribute to the existing literature surrounding the impact of ethnicity and socioeconomic variables on rates of Autism Spectrum Disorder (ASD) identification by extrapolating studies conducted in clinical settings to a public school district context. It employed both quantitative and qualitative methodologies to analyze the existence and relative strength of any correlations between percentage of campus enrollment for students with ASD and percentage of campus enrollment for other preexisting subpopulations as reflected in Texas Education Agency data Public Education Information Management System data in Longhorn Independent School District in San

Antonio, Texas. To further address the critical theory implications of this study and offer additional recommendations for practice, district-level data for those districts participating in due process hearings surrounding issues of ASD eligibility and provision of service was then coded and subjected to the same correlational analysis performed at the campus level. Conclusions have been drawn regarding the statistical and practical significance that campus and district demographics exert in identifying campus rates of ASD identification and district propensity for participating in due process litigation. The respective populations studied included a sample size of 346 data sets from Longhorn ISD elementary campuses and 138 due process hearings for the academic years 2006-2007 through 2013-2014. Based upon information provided in the review of literature, the findings in this study and the conclusions based on the research, the following recommendations are provided.

Based on the Research Study

1. An implication of this study is that the rate of “AU” eligibility in Texas public schools has increased 51% from the 2006-2007 to the 2013-2014 academic year, counteracting an overall 4% decline in special education eligibility collectively.
2. An implication of this study is that a statistically and practically significant positive relationship at a .01 confidence interval exists between percentage of campus enrollment for students with an “AU” eligibility as defined by the Texas Education Agency and the percentage of campus enrollment for the White subpopulation.
3. An implication of this study is that statistically and practically significant negative relationships at a .01 confidence interval exist between percentage of campus

enrollment for students with an “AU” eligibility as defined by the Texas Education Agency and the percentage of campus enrollment for the Hispanic and African-American subpopulations respectively.

4. An implication of this study is that statistically and practically significant negative relationships at a .01 confidence interval exist between percentage of campus enrollment for students with an “AU” eligibility as defined by the Texas Education Agency and the percentage of campus enrollment for the Economically Disadvantaged and At Risk subpopulations respectively.

5. An implication of this study is that due process hearings adjudicated on behalf of students with an “AU” eligibility or for whom an “AU” eligibility is being contested are disproportionately represented relative to the composition of the overall special education population.

6. An implication of this study is that a statistically and practically significant negative relationship at a .01 confidence interval exists between percentage of district enrollment for students with an “AU” eligibility as defined by the Texas Education Agency and the percentage of district enrollment for the Hispanic subpopulation in those districts which participated in a due process hearing during the identified study period.

7. An implication of this study is that a statistically and practically significant negative relationship at a .05 confidence interval exists between percentage of district enrollment for students with an “AU” eligibility as defined by the Texas Education Agency and the percentage of district enrollment for the African-American

subpopulation in those districts which participated in a due process hearing during the identified study period.

For Further Study

Evolving legislative mandates, ongoing austerity measures, changing demographics, and increasing public awareness all have a demonstrable capacity to affect both the efficacy and the equity of ASD identification in Texas public schools. The existing research cited in the review of literature demonstrates the need for additional study in multiple areas, specifically with regard to disparities in rates of ASD evaluation and eligibility among subpopulations, the critical theory implications of these disparities, and the potential impact of the increased prevalence of ASD on school district operations. Based upon information provided in the review of literature and the findings in this study, the following are recommendations for future research.

1. Additional research into correlations between ASD diagnoses and ethnicity within other public school districts is needed.
2. Additional research into campus-level factors which promote or suppress determinations of “AU” eligibility as defined by the Texas Education Agency is needed.
3. Quantitative studies extrapolating these study parameters to districts of varying demographic profiles are needed to substantiate or refute the findings in this study.
4. Longitudinal research in which future data is added to that compiled for this study to monitor the continued impact of increased rates of ASD identification over time is needed.

5. Qualitative study regarding effective constructs for mediation in lieu of due process filings is needed.

6. Quantitative study regarding the associated costs incurred by school districts as a function of participation in due process hearings is needed.

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