SUBGROUP DISPROPORTIONALITY IN SPECIAL EDUCATION IN A SINGLE DISTRICT

A Dissertation

presented to

the Faculty of the Graduate School

at the University of Missouri

In Partial Fulfillment

of the Requirements for the Degree

Doctor of Education

---

by

DAVID JAMES WILSON

Dr. Jay P. Scribner, Dissertation Supervisor

DECEMBER 2008

The undersigned, appointed by the dean of the Graduate School, have examined the dissertation entitled

SUBGROUP DISPROPORTIONALITY IN SPECIAL EDUCATION IN A SINGLE DISTRICT

presented by David James Wilson,

a candidate for the degree of doctor of education,

and hereby certify that, in their opinion, it is worthy of acceptance.

_____

Professor Jay P. Scribner

_____

Professor Motoko Akiba

_____

Professor Brendan Maxcy

_____

Professor Michael Pullis

_____

Professor Jerry W. Valentine

Dedication

This dissertation is dedicated to my family. To my wife and son who I love endlessly. Thank you for supporting me and keeping me from taking everything too seriously. To my mother for having the strength of character to raise me by herself and succeeding despite all odds.

Acknowledgements

There are too many people I must acknowledge in the completion of this dissertation. First and foremost, I must acknowledge and thank God for creating me with intelligence and a strong will to persevere. I must acknowledge my family and friends. Without their encouragement and excitement, I would have never finished. Thank you to my advisor, Dr. Jay Scribner, for providing me with his guidance and patience. Dr. Scribner encouraged me through many frustrations and pushed me to always think harder and with more depth. Thanks to Dr. Motoko Akiba for her guidance through the methods, statistics, and interpretation. Special thanks to my entire doctoral committee, Dr. Jay Scribner, Dr. Motoko Akiba, Dr. Jerry Valentine, Dr. Brendan Maxcy, and Dr. Michael Pullis. Their advice and feedback was invaluable. Each team member's contribution made my study stronger and helped me to think beyond my own paradigm.

TABLE OF CONTENTS

List of Tables

List of Figures

SUBGROUP DISPROPORTIONALITY IN SPECIAL EDUCATION IN A SINGLE DISTRICT

David James Wilson

Dr. Jay P. Scribner, Dissertation Advisor

ABSTRACT

The purpose of this study was to closely examine overrepresentation of African Americans, males, and low socioeconomic students in special education. Many national and regional studies have attempted to study this issue, but have failed to effectively control for confounding variables. National and regional databases do not contain student-level data making it difficult to effectively measure the interactions between race, gender, and socioeconomic status. This study followed a quantitative design, focusing on a single school district in Missouri. The study was a secondary analysis of data collected by a single school district. This district was identified by the Missouri Department of Elementary and Secondary Education as being overrepresented in special education with African American students. Student-level data was analyzed to examine the effects of race, gender, and socioeconomic on the levels of overrepresentation among demographic subgroups. The three demographic variables were paired up and those various subgroups were analyzed for levels of overrepresentation. The use of professional judgment in the diagnosis of learning disability was also examined as professionalism and unbiased evaluations are paramount to reducing overrepresentation. Results of the data analyses revealed that low socioeconomic status is the primary predictive factor for overrepresentation. African Americans in the district under study were only overrepresented in special education when they were also male in a low socioeconomic

status. Low socioeconomic status students were overrepresented in special education in every demographic pairing. Males were overrepresented in special education unless they were not low socioeconomic status. Results of the analysis of the use professional judgment revealed mixed results with gender being the only significant contributor to the use of professional judgment in identifying a learning disability.

Chapter One: Overview

In the history of education in the United States, 1954 was one of the most important years. In the landmark court case, Brown v. the Board of Education of Topeka, Kansas, the Supreme Court stated that the previous standard of "separate but equal" and subsequent discriminatory practices were no longer sufficient for educating different races. African American students must be educated alongside Caucasian students in public schools. Since that controversial decision, the battle for racial equality in education has continued to rage. A significant gap continues to exist in achievement outcomes among the races (Gosa & Alexander, 2007). On average African American students in Missouri achieve lower on reading, writing, and math and drop out of school at a rate more than double that of Caucasian students (Department of Elementary and Secondary Education, 2006).

In 1975, the federal government passed Public Law 94-142, The Education of All Handicapped Children Act (EAHCA). The purpose of this law was to eliminate another form discrimination in the public schools, discrimination against students with disabilities. Before EAHCA, many students with disabilities were relegated to separate schools or denied access to the public schools (Yell, 2005). EAHCA served to guarantee that all students, regardless of disability, are entitled to a Free and Appropriate Public Education (FAPE). A FAPE meant that schools could no longer deny educational services to students with disabilities and they could not charge parents for their education. EAHCA began a revolution in public education and dramatically changed its landscape.

Special education teachers, school psychologists, and other specialized staff were hired en masse to support students with disabilities.

Given this background of discrimination between races and students with disabilities within education, concerns within both populations began to merge. Even before the passage of EAHCA, racial inequities within classrooms for students with disabilities were prevalent (Dunn, 1968). These concerns eventually resulted in federal policy that required the monitoring of racial inequities within special education. Despite this federal policy, many issues have emerged including clarity and variability of definitions of race and disability from state to state and other relevant and confounding variables such as gender and socioeconomic status (SES) (MacMillan & Reschly, 1998).

This chapter will begin with a review of the national and state demographic breakdown within special education. The next section will briefly review the policy of disproportionality and what this policy requires of states and local school districts. Third, this chapter will review the problems of large-scale data analysis in regard to issues of disproportionality. The fourth section will expand on the problems of large-scale data in order to provide a rationale for this study. The fifth section will give the purpose, research questions, and hypotheses. The sixth section will focus on the design of ths study and give a brief methodology. The seventh section will examine the significance of this study. The next section will address the potential limitations of this study. The final section will focus on defining relevant terms, including an educational disability as well as the relevant disability areas.

Subgroup Representation in Special Education

Subgroup representation in special education was studied and discussed at the national and regional levels as early as 1968 (Dunn, 1968; Hosp & Reschly, 2004). Most of the focus, however, has been around minority, specifically African American, overrepresentation within special education (Losen, 2002b; Oswald, Coutinho, Best, & Singh, 1999). It is widely recognized in the professional literature that, nationally, African Americans and males are overrepresented in special education (National Research Council, 2002; Wehmeyer & Schwartz, 2001).

The National Research Council (2002) published a comprehensive report on the overrepresentation of minorities in special education. The report stated that, "From the enactment of the 1975 federal law requiring states to provide a free and appropriate education to all students with disabilities, children in some racial/ethnic groups have been identified for services in disproportionately large numbers" (National Research Council, 2002, p. 1). About 12% of Caucasian students nationwide are identified with a disability in the schools, while about 14% of African American students are identified with a disability. To further complicate matters, this disproportionate representation of African Americans does not exist among the disability categories with so-called organic causes. Diagnoses such as hearing impairment, visual impairment, orthopedic impairment, and severe and profound mental retardation typically have organic causes that are identified by medical professionals.

In Missouri, a state special education profile is published every year (Department of Elementary and Secondary Education, 2007b). In 2007, Missouri reported that 20% of its special education students are African American despite the fact that only 18% of the

general population is African American. Thirty-two percent of students with mental retardation or emotional disturbance are African American. Twenty-four percent of students with a learning disability are African American. The state reported no information on gender and SES, despite collecting data from the school districts on gender.

Less focus has been placed on overrepresentation of males and low SES students in special education. The data on these two subgroups, however, show a trend that is just as severe, if not more so, as the overrepresentation of minority students. Nationally, males outnumber females two to one in special education (Wehmeyer & Schwartz, 2001). This overrepresentation occurs in every disability area except deaf-blind. The overrepresentation is even more pronounced in the categories of emotional disturbance and learning disability where males outnumber females three to one (Coutinho, Oswald, & Forness, 2002; Wehmeyer & Schwartz, 2001).

Low SES students are also at a much higher risk of being identified as having a disability (O'Connor & Fernandez, 2006). One of the problems with examining overrepresentation of minority students is that SES is considered a confounding variable (MacMillan & Reschly, 1998; Oswald, Coutinho, Best, & Nguyen, 2001; Oswald et al., 1999). The reality is that African Americans are disproportionately represented in low SES in society at large (Skiba, Poloni-Staudinger, Simmons, Feggins-Azziz, & Chung, 2005). This issue makes it difficult to tell whether African American students are overrepresented in special education because of race or because of SES. Despite the well documented overrepresentation of males and low SES students in special education, federal policy only addresses racial overrepresentation.

Disproportionality Policy

EAHCA has been reauthorized three times since its inception (Yell, Rogers, & Rogers, 1998). The latest reauthorization was called the Individuals with Disabilities Education Improvement Act of 2004 (IDEA 2004). According to IDEA 2004, states must monitor the disproportionate representation of "racial and ethnic minority groups in special education and related services, to the extent the representation is the result of inappropriate identification" (Department of Education, 2006, p. 46800). This policy implies two distinct aspects for monitoring. First, it requires states to check to see if individual school districts have disproportionate representation of minorities in special education. Second, it requires states to determine if that overrepresentation is due to "inappropriate identification." If it is due to inappropriate identification, the district may be required to spend 15% of its federal special education money on early intervening services (EIS) to remedy the problem. Federal policy, however, does not stipulate how states will monitor disproportionality, what criteria will be used, or how they will determine if inappropriate identification is taking place. No references are made to disproportionate representation by gender or SES.

The Problems of Large-Scale Data

Since most of the research literature on disproportionality is centered on national or regional databases, several problems arise. The first problem is the definition of race (MacMillan & Reschly, 1998). Collection of all data that exist in national databases is dependent upon individual school districts, and ultimately each individual who reports the data. Race could be reported within a district in several different ways. In some districts the parents indicate race when they enroll the child. In other districts the school

registrar makes the decision. The state and federal data collection practices do not allow for mixed race students. The students must be classified as only one race. Two children of the exact same racial background may be classified as different races, depending on who does the data entry.

Another issue is the definitions behind the judgmental disabilities (MacMillan & Reschly, 1998). Judgmental disabilities are those disabilities that tend to be more difficult to diagnose. There is no known organic cause and diagnosis requires the judgment of professionals. While the federal government provides definitions for each disability through IDEA 2004, the states can, and often do, change those definitions or provide clarification. The effect is that a student who qualifies as learning disabled in one state may not qualify in another state. To further complicate matters, individual districts may follow certain professional practices or interpretations that may cause variations in diagnosis. One school district may diagnose a student with an emotional disturbance whereas another with the exact same information and state definition may not. For example, a child with behavior problems in a rural school with little diversity may be viewed differently than if that same child were in an inner-city school.

Another problem with national and regional databases is that the data are reported in aggregate form. In Missouri, the data are sent by the districts and are disaggregated by English language learner status, ethnicity, and age. The reported data can be analyzed at the district, state, or national level, but not at the student level. While it is possible to examine the data at these levels controlling for individual variables, the data are often reported at the state level only by race or age in aggregate form. SES is excluded completely, making it impossible to effectively control for SES as a variable at the

student level. The next section will address these issues in order to build a rationale for this study.

Rationale for the Study

This section will build a rationale for using disaggregated student level data to investigate subgroup overrepresentation in special education. Given that national and regional data can only be investigated down to the district level with current data sets, it follows that some research must be done at the student level to confirm existing studies and further investigate confounding variables. Student level data can enable researchers to parcel out all the individual variables and determine with precision, the exact nature of the overrepresentation.

For example, the overrepresentation may only exist with African American males of low SES. Student level data will provide an individual school district the knowledge it needs to pinpoint interventions to potentially alleviate problems of disproportionality. If the disproportionality exists only among African American males of low SES, then it would not make sense to implement interventions that target any other group. In order to use student level data, data will have to be collected within individual districts rather than using national and regional databases.

Because disabilities are defined differently in different states, analysis of overrepresentation in special education must be restricted to one state. Even more problematic, because each district has a different set of practices for reporting race and different interpretations of disability definitions, each district must be examined separately. It follows that the least problematic, most accurate way of examining the issue is to restrict the data collection to a single district.

Purpose, Research Questions, and Hypotheses

Education professionals must be able to address the problem of disproportionality in all its forms and in the most efficient way possible. African American students are only one of the subgroups that have problems with disproportionality in special education. School districts must examine all forms of overrepresentation, despite emphases in public policy. Overrepresentation in special education is also an issue of resources. Interventions to alleviate overrepresentation, if warranted, must be targeted to the right groups. This study was designed to help determine, with greater specificity (MacMillan & Reschly, 1998), what groups should be targeted.

Purpose

The purpose of this study was to examine overrepresentation within a single school district and how the diagnostic practice of "professional judgment" influenced the levels of overrepresentation. The district being studied has been designated by the state department of education as having a disproportionate number of African American students in special education. The study was designed to help this district better define the exact nature of the overrepresentation by broadening the focus to incorporate other demographic variables, including gender and SES. These additional variables along with race provided a more complete picture and will enable the district to determine the extent to which these other variables affect minority overrepresentation. Only when the exact nature of the overrepresentation is revealed can the causes of the overrepresentation be addressed.

The practice of professional judgment could be an underlying factor in the cause of overrepresentation. When diagnostic teams use professional judgment to make a

diagnosis, it means that the student does not strictly meet the criteria. The team, however, diagnoses the student anyway because the preponderance of evidence points to a disability. Specifically, this study looked at whether the practice of professional judgment was used at a disproportionate rate among the subgroups. If students are identified with a disability at a disproportionate rate when professional judgment is used, then the district may be using it inappropriately, thus misdiagnosing students. If it is used inappropriately, the district may need to examine why and when it uses professional judgment in order to standardize the procedure. This information will give the district a more in-depth look at how disabilities may be diagnosed differently based on race, gender, or SES and help them determine what changes may need to be made. This study sought to answer three research questions.

Research Questions

1. How does students' likelihood for disability identification differ by race/ethnicity, gender, and socioeconomic status?
2. How does students' likelihood for disability identification differ by race/ethnicity, gender, and socioeconomic status and the type of disability?
3. Is professional judgment used more often with African American, male, or low SES students when diagnosing a disability?

Hypotheses

Related to these research questions, this study sought to test the following hypotheses.

1. African Americans are overrepresented in special education for the district under study when using the Missouri criteria regardless of SES and gender.

2. Males are overrepresented in special education for the district under study when using the Missouri criteria regardless of SES and race.
3. Low SES students are overrepresented in special education for the district under study when using the Missouri criteria regardless of race and gender.
4. There is a difference among various types of disability in the pattern of overrepresentation in special education by race, SES, and gender for the district under study.
5. Among students with a disability, emotional disturbance is more likely to be diagnosed with African American students, low SES students, and male students for the district under study.
6. Professional judgment is more likely to be used with African American students, low SES students, and male students when identifying a learning disability for the district under study.

Design and Brief Methodology

The purpose of this section is to provide a brief overview of the design, methods, and setting of the study. While many studies exist that examine disproportionality (Losen, 2002b; Oswald et al., 1999) and some exist controlling for confounding variables like SES (Skiba et al., 2005), none were found that use student level data. Since student level data are only available from individual school districts and because diagnostic practices and interpretations vary between districts, the basic design of this study was a secondary analysis of data collected by a single school district. The school district was a medium size district in Missouri that was identified by the Department of Elementary and Secondary Education (DESE) as being overrepresented with African American students

in special education. It was a population study within this single school district. The study utilized student level data thus eliminating many of the limitations of previous studies, such as confounding variables and variations in disability definitions (MacMillan & Reschly, 1998; Skiba et al., 2005).

All data was retrieved from existing data sets. The school district collects and keeps demographic and special education information on all students going back several years. To access these existing data sets, completion of a series of applications and assurance statements was required by the district. The assurance statements were designed to maintain the anonymity of the district and students. These applications were reviewed by the district for approval. Once approved, demographic data including race, gender, SES, and disability (if any) was retrieved for all students in the district, Kindergarten through twelfth grade. Since some of these data change on a day-to-day basis as students come into and leave the district, all data were retrieved from the last day of school of the 2006-2007 and 2007-2008 school years. In addition to the demographic and disability information, all of the initial evaluations conducted during the 2006-2007 and 2007-2008 school years where learning disability was diagnosed were gathered. Specifically, whether the team used professional judgment when making these diagnoses was retrieved. Since student level data was retrieved, it was important to protect the identity of the students. All student names and identification numbers were removed. The next section will discuss the significance of the study.

Significance of the Study

The significance of this study is twofold. First, the results will help this particular school district with focusing its resources. If the district determines that the minority

overrepresentation is strictly among low SES, African American, males, then it can focus interventions around this subgroup. It may also reveal, as some authors suggest (MacMillan & Reschly, 1998), that the problem has more to do with SES than race. Regardless of the outcome, if the district is later required to spend 15% of its Part B monies on EIS, then it will know where to concentrate the money most efficiently. In addition, if it is determined that professional judgment is used at a disproportionate rate with African American students, the district may want to focus more attention on professional judgment practices. While the district has not been found to have discriminatory diagnostic practices by DESE, the state's current review of diagnostic practices is focused on compliance and not on the professional judgment of diagnostic teams.

The second significant aspect of this study is that it creates a model of self-analysis that other school districts could use to examine their own data and practices. Since state departments of education and national databases do not have their data broken down to the individual student level, it is difficult to study disproportionality in special education while controlling for confounding variables. Individual districts, however, can control for confounding variables and eliminate some of the inconsistency in definitions and diagnostic practice variables when they focus on their own district. In addition, school districts could analyze student level data in other programs such as Title I and gifted to look for overrepresentation and potentially bias practices.

Potential Limitations

This study gained many advantages over previous studies by using a single school district for the analysis. The ability to focus on student level data and control for

variations and interpretations of definitions of race and disabilities addresses the limitations of previous research (MacMillan & Reschly, 1998; Skiba et al., 2005). There are, however, two potential limitations of using a single district to examine overrepresentation in special education. First, to address the limitations of previous studies this study has to be limited in scope. This sacrifice makes it difficult to generalize the information to other districts and does not further define the issues of overrepresentation at the national level. It can, however, be generalized to other programs within the school district such as gifted programs, honors programs, Title I, and other programs that require placement based on judgment of professionals in the schools. The model used in this study can also be mimicked for use in other districts. The second potential limitation lies in diagnostic practices. This study overcomes differences in district level interpretation of disability definitions, but does not overcome differences in school and team level interpretation of disability definitions. There should be less variation, however, between individuals within a single district than exists in separate districts because these individuals have opportunities to meet together and discuss their diagnostic practices. This limitation exists in all studies of this type. It is a difficult variable to control for without limiting the diagnosis of students to a few individuals. Controlling the variable in this way, however, would remove the study from reality and practice, causing a different set of limitations. This limitation has the potential to provide an advantage to an individual school district because they can parcel out the data down to the individual schools making the diagnoses and see what schools are the most aberrant in their interpretations.

Definitions of Terms

In Missouri where this study will be conducted, the state plan for special education defines each disability category within which a student could potentially be diagnosed. This section will define overrepresentation, what an educational disability is according to the state plan, and the definitions of learning disability and emotional disturbance. This section will also briefly reference the other disability categories and the concept of professional judgment.

Overrepresentation

The term overrepresentation in the context of this study refers to the comparison of groups in the rate of identification for special education. A subgroup of the population is overrepresented in special education if they have a higher percentage of students in special education than other subgroups. For example, males outnumber females at a rate of two to one nationally (Wehmeyer & Schwartz, 2001), so a higher percentage of males are in special education than females.

Educational Disability

One important concept within special education is the distinction between a disability as diagnosed by a physician, psychologist, or other appropriately credentialed professional and an educational disability. Physicians and parents often make the mistake of assuming that a child is automatically eligible for special education if he or she has a disability. The problem is that the state and federal governments define only a small number of disabilities compared to the medical and psychological community and those disabilities are defined differently from the medical profession. Some disabilities, such as autism and learning disability, appear to be the same disability in the school as in other

professional communities, such as medicine and psychology, but they are not. One important distinction is that to be diagnosed with an educational disability, the child must not only meet the criteria for one of the disabilities, but the student must also require special education services. In other words, the disability must affect the student to such a degree that the regular education classroom alone is insufficient for educating the student appropriately. This distinction is often known as the two-pronged test. Because the disability definitions within education differ from the medical profession, it is necessary to review a few pertinent disability categories.

Learning Disability

DESE defines a learning disability as follows.

> "Specific Learning Disability" means a disorder in one or more of the basic psychological processes involved in understanding or in using language, spoken or written, which may manifest itself in an imperfect ability to listen, think, speak, read, write, spell, or to do mathematical calculations. (Department of Elementary and Secondary Education, 2007c, p. 25).

This definition provides a conceptual definition of learning disability, but is not easily operationalized. DESE, therefore, takes the definition further by stating that a learning disability can be diagnosed in the areas of basic reading skills, reading fluency skills, reading comprehension, written expression, oral expression, listening comprehension, mathematics problem solving, and math calculation. Reading fluency skills, however, was not added until 2007. The state definition gives two variations of how this disability can be identified. The first is through a discrepancy model and the second is through a response to intervention model. Since the district being studied has not yet used a response to intervention model, only the discrepancy model will be discussed. With the

discrepancy model, the state requires that there must be a 1.5 standard deviation difference between achievement and intellectual ability, with achievement being the lower of the two scores. Achievement and intellectual ability are generally measured through standardized, nationally normed tests. There are also several exclusionary criteria listed. A student may not be diagnosed as having a specific learning disability if his or her difficulties are due to a lack of appropriate instruction in reading or math, a visual, hearing, or motor disability, mental retardation, emotional disturbance, cultural factors, environmental economic disadvantage, or limited English proficiency. It is not saying that these exclusionary criteria cannot be present in order to diagnose a learning disability, just that they cannot be the primary source of the student's problems.

Emotional Disturbance

The DESE defines an emotional disturbance as:

> a condition exhibiting one or more of the following characteristics over a long period of time and to a marked degree that adversely affects a child's educational performance:
> A. an inability to learn that cannot be explained by intellectual, sensory, or health factors;
> B. an inability to build or maintain satisfactory interpersonal relationships with peers and teachers;
> C. inappropriate types of behavior or feelings under normal circumstances;
> D. a general pervasive mood of unhappiness or depression; and,
> E. a tendency to develop physical symptoms or fears associated with personal or social problems.
> The term includes schizophrenia, but does not apply to children who are socially maladjusted unless it is determined they have an emotional disturbance (Department of Elementary and Secondary Education, 2007c, p. 22).

The criteria for emotional disturbance is somewhat nebulous and subjective (Costenbader & Buntaine, 1999; Forness, 1992). Schools have struggled with consistently operationalizing the criteria leading to court cases that have done little to

further define the disability (Forness, 1992). Because of the subjectivity involved in making the diagnosis, there is potential for discrimination to occur. Whether a student meets the criteria is strictly a matter of opinion.

Other Disabilities

As indicated in the definition of a disability from the state compliance plan, there are twelve categories of disability. The state compliance plan provides definitions for each, but the remaining definitions will not be addressed specifically here. The research literature (MacMillan & Reschly, 1998; O'Connor & Fernandez, 2006) tends to term the different disability categories as judgmental and non-judgmental. The non-judgmental categories are those where the disability tends to be more observable and typically supported by a medical professional. The non-judgmental categories consist of orthopedic impairment, blind, deaf, deaf-blind, and traumatic brain injury. The judgmental categories are termed such because their diagnosis depends on the judgment of a group of professionals and where the effects of the disability are not readily observable. These disabilities are often difficult to consistently diagnose between professionals. Among these disabilities only mental retardation, language impairment, learning disability, emotional disturbance, and other health impairment have had minority overrepresentation in the district being studied. While all the judgmental disabilities will be included as part of the analysis to address the first through fourth hypotheses, only emotional disturbance and learning disability will be analyzed with more depth (hypotheses five and six) as these disabilities are more frequently identified using the potentially subjective practice of professional judgment.

Professional Judgment

Professional judgment is based on the concept that not all students fit perfectly into the mold of a disability. Often students present to the diagnosing team as having a particular disability, but do not entirely meet the criteria. When this situation occurs, the diagnostic team can use professional judgment to diagnose the student with a disability. DESE has provided little guidance in the use of professional judgment. They have, however, provided guidance for its use with learning disabilities. According to DESE, using professional judgment for diagnosing a learning disability is only appropriate when using the discrepancy model. While the criteria for learning disability are relatively specific, the use of professional judgment adds some subjectivity and potential for error in diagnosis.

Summary of Chapter One

The intent of this overview chapter was to convey the importance of this study and to define the parameters around which it was conducted. Minority overrepresentation is a national issue and a politically important topic within special education. To limit the study of overrepresentation, however, to only racial minorities is myopic at best. The federal policy ignores the important nuances that exist around the topic, making it difficult for school districts to address the issue effectively. By broadening the examination of overrepresentation in special education to include gender and SES, an individual school district can more effectively and efficiently use its resources to address overrepresentation. This study also examines the important, but subjective diagnostic practice of professional judgment. If discrimination exists in a district's diagnostic practices, one potential source of discrimination lies around professional judgment. The

next chapter will explore in-depth the literature surrounding discrimination in education, special education processes, and overrepresentation in special education.

Chapter Two: Literature Review

This chapter will consist of a literature review of the issues surrounding disproportionality in special education. The literature review will start broadly, discussing discriminatory issues in education. This section will examine racial, class, and gender discrimination as it has existed in American education. It will also address significant events such as United States Supreme Court rulings and federal law. The second section will examine the special education evaluation process as it exists today. It is important to understand special education disproportionality within the context of special education process. The third section will examine in-depth the policies that address racial overrepresentation in special education at the federal and state levels. The final section will look at the research and theories behind disproportionality, focusing on race, SES, and gender. The final section will also look at the various arguments regarding discrimination existing in the literature and the construct of professionalism and bias in identification of students with disabilities.

Discriminatory Issues in Education

Despite the American ideals of fairness and equality espoused in the constitution and by the government, many inequities and acts of discrimination have occurred in the United States since its inception. By far the most well-known and far-reaching act of discrimination in the United States was slavery. The issue of slavery was contentious from the very beginning of the country's history, leading to legislative compromises and culminating in a civil war. The civil war ultimately led to the abolition of slavery in the United States, but it did not end discrimination against African-Americans.

The education system in the United States is intended to have more impact on the individual lives of its citizens than any other government agency. Because schools in the United States are governed by state and local authorities, with only some regulation by the federal government, schools have become a microcosm of the political strife and disagreements faced throughout the country. Views on discrimination toward groups at state and regional levels are reflected in the school systems. This section will concentrate on these discriminatory issues and how they have manifested in the American school system. The first subsection will examine the most contentious and well-known area, racial discrimination. The second subsection will examine discrimination based on class, discrimination against individuals with low socioeconomic status. The third subsection will examine discrimination surrounding gender. The fourth subsection will examine the most highly regulated area, students with disabilities.

Race

The history of racial discrimination in education in the United States is largely the history of African Americans in education. While there have certainly been other minorities in American education throughout the last 200 years, no other minority has received the kind of targeted discrimination that African American students have received. After the American Civil War, African Americans received the full benefits of citizenship and were entitled, in theory, to the same rights that Caucasian Americans had (Imber & Van Geel, 2000; Rury, 2002). The 14th Amendment of the United States Constitution gave African Americans citizenship and counted them as full Americans instead of as only 3/5 of a person (Cook, 2005; Pulliam & Van Patten, 2003). The 15th Amendment granted African Americans the right to vote. Despite being given the full

rights of citizenship, subsequent rulings by the Supreme Court and laws passed by many states quickly eroded those rights.

Plessy v. Ferguson. One of the most significant cases in the history of education is the case of Plessy v. Ferguson (Imber & Van Geel, 2000). Ironically, this case had nothing to do with education, but it set a precedent that was upheld for over 50 years ("Brown V. Board of Education," 1954). In 1892, Homer Plessy, who was 1/8th black, attempted to ride in a rail car designated as whites only. When he refused to move to the black-only rail car, he was arrested. The case was argued before the Supreme Court in 1896 (Imber & Van Geel, 2000). The court ultimately held against Homer Plessy, stating that there was no reason to believe that the black-only car was inferior in any way to the white-only car, nor did the law confer an inferior status to African Americans. Plessy v. Ferguson established the doctrine of "separate but equal" (Cook, 2005; Cron, 2004; Pulliam & Van Patten, 2003). It established the precedent that any law can be written that separates blacks and whites so long as the services or circumstances were equal between the races (Cook, 2005). This precedent was quickly applied to education. Since African Americans were considered full citizens according to the 14th Amendment (Pulliam & Van Patten, 2003), they had a right to an education like any other citizen. Many states and local school districts passed laws that blacks and whites would be separated in schools. Given the legal precedent of the Supreme Court, it was assumed, albeit erroneously, that these separate educational facilities provided the same opportunity to African Americans as was afforded to Caucasians. The doctrine of separate but equal was steadily eroded over the next 50 years (Cook, 2005) and was overturned in 1954.

Segregation and Brown v. Board of Education. As far-reaching and impacting as Plessy v. Ferguson was in restricting the rights of African Americans, Brown v. Board of Education was as equally far-reaching and impacting. Brown v. Board of Education was actually five cases from four different states that were argued together before the Supreme Court (Cron, 2004). Since they all addressed the issue of separate educational facilities for African Americans, the Supreme Court consolidated the cases. The holding was written by Chief Justice Warren. In providing background to the case, Justice Warren wrote that the state of education at the time of the holding was substantially different from what it was like at the time of the 14th Amendment and Plessy v. Ferguson ("Brown V. Board of Education," 1954). Free, public education was still non-existent in much of the country. African Americans were almost 100 percent illiterate and schools for African Americans were prohibited in some states. Schools for Caucasian students were mostly private schools ("Brown V. Board of Education," 1954). Where free and public schools existed, attendance was not mandated (Imber & Van Geel, 2000). Given the circumstances, Warren wrote that it was impossible to judge the intended effect of the 14th Amendment on public education. The Supreme Court held that the separate but equal doctrine did not apply to public education because separating blacks and whites in the schools created an inherently unequal environment and violated the equal protection clause of the 14th Amendment ("Brown V. Board of Education," 1954; Cook, 2005; Cron, 2004; Pulliam & Van Patten, 2003).

Achievement gap and continued segregation. The states and public school systems have been working continuously over the last fifty years to carry out the order of the Supreme Court, with varying levels of success (Cron, 2004). To say that racial

discrimination in public education ended with the Brown decision would be a deception. African Americans are still at a distinct disadvantage in schools today (Blanchett, Brantlinger, & Shealey, 2005) although some would argue that blatant discrimination no longer exists. Despite efforts to eliminate discrimination in the schools, a distinct gap in achievement still exists between Caucasians and African Americans (Gosa & Alexander, 2007). African Americans drop out at a disproportionately higher rate (Department of Elementary and Secondary Education, 2006) and are overrepresented in remedial and special education programs (Blanchett et al., 2005; Daniels, 1998; Hosp & Reschly, 2004; Losen, 2002b; National Research Council, 2002).

In addition to gaps in various measures of achievements, some believe that schools are also beginning to suffer from non-mandated de facto segregation. Cron stated,

> by the mid-1970s, the minority population [in Topeka, Kansas] had expanded substantially, with much of the white population moving to the suburbs. Brown v. Board of Education was refiled, the plaintiffs alleging that the neighborhood elementary schools were once again becoming "separate but equal" sites of single-race enrollments (Cron, 2004, p. 47).

Socioeconomic Status

Modern education is not only free, but mandated in all states for all American citizens up to a certain age (Imber & Van Geel, 2000). Public education is not mandated by the federal government, but constitutionally required in all state constitutions. Having a free pubic education system available to all enables Americans with few or no resources the opportunity to receive an education. Education is widely recognized in American society as being the primary tool to increase wealth (Pulliam & Van Patten, 2003). In theory, Americans from all SES levels attend public schools and are given equal opportunity to learn. The reality, however, is that not all Americans come into the public

schools with the same level of knowledge and experience. This problem is primarily true for students of poverty (National Research Council, 2002). Because all students must be educated, schools must accommodate all levels of ability and prior experience. In the early life of the United States, education was only available to those who had the money to pay for it (Pulliam & Van Patten, 2003). The rise of the American education system has been an evolutionary process (Rury, 2002), but many of those in poverty were left out along the way.

The early adoption of democracy fostered the education movement (Pulliam & Van Patten, 2003). Pullia, and Van Patten state, "The rising tide of democracy threatened the dual system of education in which the elite enjoyed good schools and the masses were largely ignored." (2003, p. 104). Schools for the wealthy were Latin grammar schools. Education in the south followed the English tradition of family tutoring. A new type of school, the academy, emerged for the middle class and the poor. Early American schools were centered on the businesses of the day. Elementary education was inexpensive, but not always free, if it was available at all. Without education, the poor would remain poor because they had no means to become upwardly mobile. Pulliam and Van Patten state, "It was an American belief that the schools could be used for advancement up the social ladder, and the person of ability could qualify for a high-paying job by acquiring education." (2003, p. 163).

The idea for a tax funded public education system did not become popular until the Civil War period. Discrimination against the poor is not the best word to describe early American education. Certainly a free education would have helped the poor, but there was no common will supporting or understanding of the importance of a free

education. Because education was the domain of the states and not the federal government, education in America has experienced uneven growth (Rury, 2002).

Even with the advent of a free, public education, many families still did not recognize the importance of education. Many families, especially poor families would rather have their children working to help support the family. In rural areas they would work on the family farm. In urban areas they would work in factories (Rury, 2002). The idea that an education could provide a better life for a child tomorrow was a lower priority than putting food on the table today. Rury states, "The immediate and direct effect of industrial development, consequently, may have been to lower educational attainment of children in industrial communities, typically the offspring of poorly paid industrial workers." (2002, p. 62). Ironically, the industrial revolution, while lowering the educational attainment of many children, actually encouraged free public schools. The deteriorating conditions in the cities increased poverty and lawlessness. Schools were seen as a solution. They were a place where proper standards of conduct could be taught in addition to basic academic skills (Rury, 2002).

Most states had implemented compulsory education laws by the end of the 19th century (Imber & Van Geel, 2000), but those laws varied from state to state. In 1918, education was compulsory in every state (Yell, 2005). The length of the school year varied as well as the maximum age for required attendance. Graduation from high school is still not mandatory, but mandatory attendance until age 16 is common. In modern American society, a high school diploma is seen as the minimum requirement to obtain a good job in the workforce. A college degree is strongly encouraged. The problems of a century ago still exist today among the poor when it comes to education. They do not get

enough education to allow them to succeed in the current environment, despite opportunities to do so. When the low-educated, low SES students become parents, the cycle is perpetuated (National Research Council, 2002). Their children do not enter school with the skills they need and are behind before they start.

Not all of the blame, however, can be placed on the low SES families. Today, high poverty schools suffer significant problems with teacher shortages. Approximately 20 percent of teachers in high poverty schools leave each year, which is almost double the attrition rate of other schools (Ingersoll, 2003). The primary reasons for turnover are not retirement, but job dissatisfaction due to discipline problems and low pay. Many teachers just do not want to work in high-poverty schools. Discipline rates are higher in high-poverty schools and some teachers would prefer to make more money in other professions or in schools where there are fewer discipline problems.

It is important to acknowledge that children from poverty suffer large disadvantages when they begin and progress through school. They tend to be behind other students in their academic development, exhibit more discipline problems, and have a higher incidence of disabilities (Ingersoll, 2003; National Research Council, 2002; Skiba et al., 2005). Most importantly, however, families of poverty tend to have proportionally more ethnic minorities than the middle and upper classes (National Research Council, 2002). Skiba states, “the consistent overlap of race and poverty in this country has led some to suggest that race is simply a ‘proxy’ for poverty” (2005, p. 131). Given the risk factors associated with poverty, it is arguable that many of the disadvantages faced by African Americans are not due to their race or discrimination, but to the influence of poverty.

As important as race and SES are in the discussion of education, especially special education, there is one other important subgroup. The next sub-section will examine issues of discrimination in education around gender.

Gender

There is no question that throughout world history, education has historically privileged males in the dominant class, often males from wealthy families. This precedent was true in the early United States, especially when considering wealth (Rury, 2002). Rury states, "Following the Revolution, growing numbers of girls attended school along with the boys, at least in the Northeastern states and upper Midwest, marking yet another unique feature of American education" (Rury, 2002, p. 71). In the mid 19th century women were seen as having an important role in American education, namely as teachers. In that respect, in order for women to be teachers, they had to have enough formal education to be able to teach others. It was not widely believed that education for girls should be the same as for boys, but they received an education nonetheless. In fact, girls outnumbered boys in secondary education by a margin of two to one in the latter part of the 19th century (Rury, 2002; Tyack & Hansot, 1990). The literacy rate for females during this period was higher than that of males and girls either equaled or outperformed boys in academics (Tyack & Hansot, 1990).

While women in the latter part of the 19th century enjoyed considerable freedom to engage in education, school was still the domain of small subgroups of society. Despite outnumbering males in high schools, only about 10 percent of women actually attended school (Rury, 2002). These women tended to be from the middle or upper class and predominantly Caucasian (Tyack & Hansot, 1990). The general attitude regarding women

in education was that it was to further the cause of the republic through educating children rather than opening opportunities for women. The small numbers of individuals in formal education, especially secondary and post-secondary education, combined with the perceived purpose of education for women did little to challenge the dominance of white, males in American society (Rury, 2002).

During the beginning of the 20th century, however, many of the opportunities available to women in education changed or decreased. Scholars and educators of the Progressive era were concerned that male students were losing their masculinity due to the perceived feminization of the American education system (Rury, 2002). These fears along with changes in how women were employed prompted schools to create classes geared toward the perceived needs of women. Women came to dominate classes such as home economics, sewing, typing, and stenography (Rury, 2002). Rury states, "home economics became a way of defining women's roles through training in accepted forms of work, and socialization in prescribed standards of conduct" (Rury, 2002, p. 164). This type of education, where subgroups of people are provided different types of education depending on their background and "destiny" is called social efficiency (Tyack & Hansot, 1990). Females were relegated to specific class types and opportunities were limited in comparison to men. American education, however, remained coeducational (Riordan, 1990; Rury, 2002; Tyack & Hansot, 1990).

In more recent years, federal legislation has largely settled many issues regarding gender equity in education. In 1972, Title IX was passed as part of the Educational Amendments of 1972. Title IX dictates that no one can be denied, based on sex, access to or the benefit of an educational program or activity that receives federal funding

(Riordan, 1990). Given the current educational opportunities available to girls and women in American education and their levels of achievement, it would be difficult to argue that systematic discrimination still exists against female students. There are, however, other gender based issues related to education. Pulliam and Van Patten state, "Research shows that girls are still discouraged from seeking careers in science and mathematics" (2003, p. 280). Blanchett, Brantlinger, and Shealey state, " in spite of girls actually achieving higher than boys on most educational measures, when they reach adulthood, women still hit the glass ceiling in terms of occupational advancement and equal pay" (2005, p. 67).

In recent decades, the myths surrounding gender differences in achievement in math and literacy have been discredited (Kovas, Haworth, Petrill, & Plomin, 2007; White, 2007). Several research studies conducted in the 1960s and 1970s indicate that one significant variable in gender specific achievement revolves around teacher expectations (Riordan, 1990). If a teacher expects boys to excel in math and science and girls to excel in literacy, then they will.

Another area of contention around gender in education revolves around discipline and behavior. "The issues of order and control in school disproportionately involve boys. Boys are usually the troublemakers, whether the school is mixed- or single-sex." (Riordan, 1990, p. 59). Males are suspended or put on probation at a rate that more than doubles that of females. Some suggest that girls are better at "playing school" and thus stand out less than boys (Salomone, 2003). As a result, some debate exists on whether behavioral differences, actual or perceived, combined with lags in academic achievement on the part of boys has lead to boys being disproportionately referred to special education

and remedial programs (Wehmeyer & Schwartz, 2001). On the surface, the evidence suggests that it is not so much girls who are discriminated against in schools, but boys. Because they tend to be more active and misbehave more, they stand out more and are more likely to be removed from a regular classroom. With the majority of teachers being females, it is possible that the teachers do not understand the behavior of boys as well, thus singling them out more frequently. The issue, however, is more complex (Wehmeyer & Schwartz, 2001). There is no evidence that boys identified with a disability or placed in these remedial programs are done so inappropriately. It is possible that they really do have a disability or need the extra help. It is possible that girls who need extra help or might have a disability are not receiving the help they need because they do not stand out. These arguments are theoretical until research can substantiate them (Wehmeyer & Schwartz, 2001). What is clear, is that gender inequity exists within special education, even if it is unintentional (Coutinho & Oswald, 2005; Coutinho et al., 2002; Wehmeyer & Schwartz, 2001).

Race, SES, and gender are all important ways of looking at discrimination. The next section will examine an often-overlooked group where there has been a history of discrimination in education, students with disabilities.

Students with Disabilities

Historically, the plight of individuals with disabilities in the United States has not been pleasant. Individuals with mental retardation or other severe disabilities were often placed in institutions (Yell et al., 1998). The only students with disabilities who have consistently received public education in the United States are those with visual, hearing, and speech impairments (Rury, 2002). Schools for the blind, deaf, and mute have been in

existence in America since the mid-19th century. While education was compulsory in all states by 1918 (Yell, 2005), students with disabilities were still systematically excluded. Prior to the latter half of the 20th century, most students with disabilities were placed in institutions or excluded from school completely (Yell, 2005). Not only were compulsory attendance laws ignored, but case law and some state laws actually contradicted attendance laws. School laws were, in many respects, hostile to students with disabilities and their families.

> In 1958 the Supreme Court of Illinois, in *Department of Public Welfare v. Haas*, held that the state's existing compulsory attendance legislation did not require the state to provide a free public education for the 'feeble minded' or to children who were 'mentally deficient' and who, because of their limited intelligence, were unable to reap the benefits of a good education (Yell, 2005, p. 63).

Some states made it illegal for parents to pursue a public education for their children with disabilities (Yell, 2005), effectively prohibiting their advocacy efforts. While completely unintentional, Brown v. the Board of Education changed everything for students with disabilities.

Significant court cases. Brown v. the Board of Education was the first significant victory for the civil rights movement in the United States. While it may have only affected African American students, the case set the precedent for future laws and court cases for many oppressed groups. The American culture had fundamentally shifted in the 20th century. Several court cases followed the example of Brown in that they argued the Equal Protection Clause of the 14th Amendment was being violated by denying students with disabilities access to an education. Two such significant cases were Pennsylvania

Association for Retarded Citizens v. Pennsylvania and Mills v. Board of Education (Yell, 2005). Both were class action lawsuits decided in 1972.

The Pennsylvania case established four key points (Yell, 2005). First, students with mental retardation are able to learn even if it is not the traditional curriculum. Second, education is not just about academics. Third, students with mental retardation could not be denied a free public education because the state had mandated it for all children. Students with disabilities must be educated in the regular classroom as much as possible (Essex, 2008; Yell, 2005). Fourth, education for students with mental retardation is more effective if started earlier, including preschool opportunities.

In Mills v. Board of Education, the federal district court followed the precedent established by Brown v. the Board of Education stating that if states could no longer segregate students based on race, then they could no longer exclude students based on disability (Imber & Van Geel, 2000; Yell, 2005). One important precedent set in this case was the establishment of procedural safeguards.

> The procedural safeguards included the following: the right to a hearing, with representation, a record, and an impartial hearing officer; the right to an appeal; the right to have access to records; and the requirement of written notice at all stages of the process (Yell, 2005, p. 68).

These safeguards were later written into law and are still used in education today.

Federal statutes. The Pennsylvania and Mills cases and Brown v. Board of education set the stage for a series of laws that would dramatically change the landscape of American Education. The first federal laws regarding students with disabilities were passed in the 1950s and 1960s (Yell, 2005). Most of these laws focused on providing funds to train teachers for students with disabilities. These kinds of laws provided a base

for later expansion of the requirements. One important statute was the Elementary and Secondary Education Act, passed in 1965. This law provided funds to the states for disadvantaged children, including some students with disabilities. The Education of the Handicapped Act of 1970 later merged previous laws and established more federal grants encouraging programs for students with disabilities (Yell, 2005).

One of the most significant federal laws affecting students with disabilities was the Rehabilitation Act of 1973, specifically section 504. Section 504 states:

> No otherwise qualified individual with a disability in the United States, as defined in section 7(20), shall, solely by reason of her or his disability, be excluded from the participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance ("The Rehabilitation Act of 1973," 1973).

This law requires that organizations that receive federal funding may not discriminate against someone because they are disabled. It defines a disability as an impairment that substantially limits a major life function, including walking, seeing, hearing, speaking, breathing, learning, working, and taking care of oneself (Essex, 2008; Imber & Van Geel, 2000; Yell, 2005). Much of this law has been ill defined except through subsequent case law.

Education for All Handicapped Children Act. By far, the most significant federal law to affect students with disabilities was the Education for All Handicapped Children Act (EAHCA), passed in 1975. This law effectively eliminated government approved discrimination against students with disabilities, requiring school districts to find, diagnose, and provide special education services for students with disabilities (Imber & Van Geel, 2000; Yell, 2005). Federal money was provided to all states that would agree to provide a free and appropriate public education to all students with qualifying

disabilities. Eventually every state elected to participate, making the law effective nationwide. EAHCA was later reauthorized and amended on several occasions, in 1986, 1990, 1997, and 2004 (Yell, 2005). It was re-titled in 1990 to the Individuals with Disabilities Education Act (IDEA) (Yell, 2005; Yell et al., 1998). The first special education laws dealt with providing students with disabilities access to schooling.

> Building on these successes, legislation in the late 1990s and early 2000s began to focus on a new issue: ensuring students with disabilities received beneficial and meaningful educational programs. Moreover, these laws required that schools and school districts be accountable for providing quality programming. (Yell, 2005, p. 78).

Summary of Discriminatory Issues in Education

Like race, equal access to education for students with disabilities did not come until significant court cases and federal legislation mandated it. Like most issues in the history of education, education for oppressed groups of students has been an evolution and not a quick revolution. When significant events occurred, they occurred in close succession. These events, however, only occurred after decades of societal changes in attitude and preliminary court cases that set the stage and precedent for significant change. African Americans and students with disabilities suffered the most significant forms of direct, government-sanctioned discrimination. Low SES students and females were not always afforded the same opportunities as higher SES students and males, but to say they were systematically discriminated against would be misleading. Their opportunities increased as the public education system evolved. In order to continue building an understanding of subgroup representation in special education, it is vital that a clear understanding of the policies behind how a student is identified with a disability is established.

Special Education Evaluation Process

The identification of individuals with disabilities has been an evolutionary process just like the public education system. Some disabilities have been easily identified since the dawn of humankind. It has always been easy to identify people who are blind, deaf, or have certain orthopedic impairments. It is a simple matter of observation. Individuals with severe cognitive impairments are also readily observable and it does not require formal training. The field of diagnosing disabilities becomes more difficult when the impairments are milder, such as learning disabilities, language impairments, attention disorders, or even mild or moderate mental retardation. Diagnosing these types of disabilities requires special tools and training. This section will examine the process and procedures for identifying students with a disability in the schools.

Referral

Every public school district operates under a certain set of obligations regarding the evaluation of children with disabilities. One primary obligation is a concept called "child find" (Yell, 2005). All students, "from birth to age 21, residing in the state who are in need of special education and related services or are suspected of having disabilities and in need of special education are identified, located, and evaluated" (Yell, 2005, p. 256). There are a couple of salient parts that must be emphasized. First, these children must be identified and located. It is not acceptable for school districts to wait until students with disabilities come to them. School districts must conduct certain activities that alert the public to the services they have for children with disabilities (Department of Elementary and Secondary Education, 2007c; Imber & Van Geel, 2000). The second salient piece is that these students must be evaluated. This provision requires the school

district to conduct the evaluation or pay for an outside evaluation (Yell, 2005). When a child is identified as being in need of an evaluation, it is called a referral. A referral may come from the parents of the child or from school district staff. Once a referral has been made and the school district sees reason to suspect a disability, an evaluation must take place (Department of Elementary and Secondary Education, 2007c).

Assessment

The American Educational Research Association, American Psychological Association, and National Council On Measurement In Education, developed a set of standards for testing in the schools. The most relevant standards follow:

1. Those responsible for school testing programs should ensure that the individuals who administer the tests are properly instructed in the appropriate test administration procedures and that they understand the importance of adhering to the directions for administration that are provided by the test developer.
2. Those responsible for school testing programs should ensure that the individuals who use the test scores within the school context are properly instructed in the appropriate methods for interpreting test scores.
3. If test results are used in making statements about the differences between aptitude and achievement for an individual student, an educational decision based on these differences should take into account the overlap between the constructs and the reliability or standard error of the difference score.
4. In elementary or secondary education, a decision or characterization that will have a major impact on a test taker should not automatically be made on the basis of a single test score. Other relevant information for the decision should also be taken into account by the processionals making the decision (1985, pp. 52-54).

These four testing standards are fundamental to the training of a school psychologist and some aspects are codified into law for the special education evaluation. Any formalized assessment given to a student must be consented to by the student's parents. The assessments given are for the sole purposes of identifying any educational disabilities and

determining the level of placement and programming within special education. The assessment must be concluded within a federally dictated time period. IDEA 2004 dictated a sixty day time limit for evaluations (Yell, 2005).

Diagnosis

As was stated in chapter one, there is a difference between an educational disability and a disability diagnosed by a physician or psychologist. The state and federal governments define certain disability categories and establish criteria for each (Essex, 2008; Yell, 2005). An inter-disciplinary team of school staff (e.g. school psychologist, general education teacher, special education teacher, speech-language pathologist, and administrator) meets with the parents and determine if the student meets the criteria for a disability and requires special education (Department of Elementary and Secondary Education, 2007c; Essex, 2008; Yell, 2005). Once a diagnosis is made and the parent consents, the student is placed into special education. Students are reevaluated every three years. The evaluation process is important to understand when looking at issues of discrimination in education and at federal policy regarding minority overrepresentation in special education. While state and federal laws provide guidance and mandates for evaluating and educating students with disabilities, they are not infallible. Final eligibility for special education comes down to the decision of a small group of professionals within a school district (Department of Elementary and Secondary Education, 2007c; Essex, 2008; Yell, 2005).

Policy of Disproportionality Among Racial Subgroups

It is hardly surprising with the culmination of court cases and legislation that issues of discrimination within racial groups and individuals with disabilities would

eventually converge. This convergence was already seen as early as the late 1960s (Dunn, 1968). One important court case out of California, Larry P. v. Riles examined overrepresentation of African Americans in classrooms for the mildly mentally retarded. One of the central themes of the case was the alleged misuse of intelligence tests as the primary means for diagnosis. The court held that the chosen intelligence tests were biased against minorities and a significant cause of overrepresentation in these classrooms (Jacob-Timm & Hartshorne, 1998). This holding came about despite the court's acknowledgement that the standing injunction against the use of intelligence tests for African American students had not resulted in a sizable reduction in the rate of disproportionality for the mildly mentally retarded diagnosis.

In 1997 amendments to the IDEA resulted in a new policy that addressed the intersection between race and disability (Jacob-Timm & Hartshorne, 1998). A policy is nothing more than how a government body decides to act and how it decides to fund those actions. (Marshall & Gerstl-Pepin, 2005). When the federal government passed IDEA, it decided that an overrepresentation of minority students in special education was undesirable, especially if that overrepresentation is the result of inappropriate diagnosis. This section will look at two main issues. First it will briefly examine the federal policy. Second, it will examine how states have applied the policy at the state and local level.

Federal Policy

Much of education law, especially special education law in the latter half of the twentieth century was largely influenced by cultural shifts (Schein, 2000) in politics and American society at large.

IDEA requires states to monitor the level of racial representation in special education at the state and district level. The federal policy consists of two parts.

> Each State that receives assistance under Part B of the Act, and the Secretary of the Interior, must provide for the collection and examination of data to determine if significant disproportionality based on race and ethnicity is occurring in the State and the [Local Education Agencies] of the State ("Federal Register," 2006, p. 46805).

This first part states simply that states must collect and monitor data regarding racial representation in special education across the state and district levels. The policy also requires states to monitor suspension and expulsion rates for racial subgroups, but that issue will not be discussed here.

The second part of the policy states that corrective measures should be put into place if a school district is found to have a disproportionate representation of a racial subgroup in special education *and* that overrepresentation is due to inappropriate identification.

> [T]he State or the Secretary of the Interior must…[p]rovide for the review and, if appropriate revision of the policies, procedures, and practices used in the identification or placement to ensure that the policies, procedures, and practices comply with the requirements of the Act ("Federal Register," 2006, p. 46805).

These two parts of the policy existed for years without any other district level sanctions, except "corrective measures." The states decided what those corrective measures were. The unwillingness to impose sanctions, however, changed with the reauthorization of IDEA in 2004.

The lack of significant change in the level of racial disproportionality became an environmental input that led to a change in the policy (Marshall & Gerstl-Pepin, 2005). IDEA 2004 added a third part to the policy, sanctions. It stated that districts that have a

racial overrepresentation in special education and are found to identify those students inappropriately are required to spend 15% of their federal monies on early intervening services (EIS). The idea behind these sanctions is that intervening early with at-risk students might prevent them from being identified as students with a disability. There is an important piece to remember when examining the federal policy. The federal government has no responsibilities with this policy. Implementation is left solely to the states. The federal government may have some limited oversight of the states, but the states decide how to monitor districts, what criteria will be used to determine disproportionality (Bollmer, Bethel, Garrison-Mogren, & Brauen, 2007), and what criteria will be used to determine if districts are inappropriately identifying students. This factor makes it important to know how states are choosing to examine disproportionality.

State Implementation

This section will look at the aspects of state implementation. Since it is not practical to examine every state, this subsection will examine several recommended methods for examining disproportionality and how it is implemented in Missouri. The methods used in Missouri are not articulated in the state plan for special education and are known by the author's experience and discussions with state officials.

There are two statistical methods most often used to look at minority overrepresentation. Each method answers a different question (MacMillan & Reschly, 1998). The first, called composition, is the percentage of a particular race in special education or a disability category (Bollmer et al., 2007).

> Composition answers the question, What percentage of students receiving special education and related services for a particular disability are from a specific racial/ethnic group? To assess disproportionality, the racial/ethnic

> composition of the disability category is typically compared to the racial/ethnic composition of the total student enrollment to determine whether they are similar (Bollmer et al., 2007, p. 187).

The second common method is called assessing risk (Bollmer et al., 2007). With the risk method, one looks at the percentage of students from a particular racial category who are identified as having a disability. This method seeks to answer questions like, what percentage of African Americans are identified as having a learning disability (Bollmer et al., 2007; MacMillan & Reschly, 1998)? The results of the two methods are often confused. Using the composition method, it may be reported that 44 percent of students diagnosed with an emotional disturbance are African American. This statistic must be compared to the overall percentage of African Americans in the general population to determine if an overrepresentation exists. If only 22 percent of the population is African American, then a likely conclusion is that African Americans are overrepresented in the emotional disturbance category. What can be confusing for some is when the statement is reversed. If 44 percent of students with an emotional disturbance are African American, it is not the same thing as saying 44 percent of African Americans have been diagnosed with an emotional disturbance. The assessing risk method must be used in these situations. While 44 percent of students with an emotional disturbance may be African American, it may be that only 2.3 percent of African American students have been diagnosed with an emotional disturbance. The risk method, however, is also somewhat misleading (Bollmer et al., 2007). The result must be compared to the percentage of students with an emotional disturbance in special education regardless of race.

While the composition method and assessing risk method may be easily understood, they are also easily confused and must be analyzed using a comparison group. The risk ratio may be a less confusing method for assessing disproportionality (Bollmer et al., 2007). The risk ratio divides the percent risk of a subgroup by the percent risk for a comparison group. For example, if 2.3 percent of African Americans and .87 percent of Caucasians have been identified as having an emotional disturbance, then the risk ratio for African Americans compared to Caucasians is 2.64. In other words, African Americans are identified with an emotional disturbance at more than twice the rate of Caucasian students. One problem with the risk ratio, is that the choice of comparison groups can affect the final risk ratio (Bollmer et al., 2007). Since Caucasians are the majority of the population and often seen as the dominant social group in American society, they are often used as the comparison group. The problem is that Caucasians do not always represent the majority population or may not be a significant majority. Bollmer (2007) suggests that the best comparison group for the risk ratio is all other students rather than just one other racial group.

As clear and simple as the risk ratio is, it still presents a couple of problems. When applied to district level data, variations in demographics and size can have dramatic effects on the ratios (Bollmer et al., 2007). A district with few students in a particular minority category may look extremely overrepresented among a particular racial group, but the ratio only represents a small number of students. For example, if a district only had 10 Native American students and 5 were diagnosed with a disability, it would look like Native Americans were identified with disabilities and 3.5 times the rate of other students. With populations that size, even small changes can make a big

difference in the ratio. If one large family moves out of the district, the identification rate could drop from 3.5 times the norm to zero. The risk ratio also makes it difficult to compare districts (Bollmer et al., 2007).

> The risk for the comparison group is jointly influenced by the racial/ethnic composition of the comparison group and the risk for each of those racial/ethnic groups. Thus, a racial/ethnic group may have the same risk in two districts, but substantially different risk ratios because of the variability in the district-level racial/ethnic demographic distributions (Bollmer et al., 2007, p. 191).

The weighted risk ratio may be a better solution when district comparisons need to be made (Bollmer et al., 2007). The weighted risk ratio is as simple to understand as the regular risk ratio, but is much more complex in calculation. The weighted risk ratio utilizes the demographic proportions at the state level and multiplies the state proportions of each racial category by the risk calculations for each racial category in the district when calculating the denominator of the risk ratio. This calculation has the effect of normalizing the district's racial categories to match that of the state. It allows for smaller racial groups to be analyzed and since all districts use the same state proportions to calculate the weight, districts can be compared. None of these methods, however, provide any specific criteria for determining what is considered *significant* disproportionality. Is it significant if one subgroup is identified with a disability at a rate twice that of other groups? On the surface it would seem so, but what is the cutoff point? Is significant disproportionality a ratio of 1.5, 1.1? Despite these effective methods for calculating disproportionality, the states individually determine a cutoff point for significance.

Since this study focuses on a single district in Missouri, only Missouri's criteria will be discussed. The Department of Elementary and Secondary Education (DESE)

established a three-part test for determining significant minority overrepresentation (M. Corey, personal communication, February 14, 2007) for the 2005-2006 and 2006-2007 school year. The data are submitted to the state in aggregate form from each school district during the annual count of students with disabilities on December 1st (Department of Elementary and Secondary Education, 2007a). Each disability category is broken down by level of placement in special education, race, and English language learner status. The three-part test was run on the special education population in total and seven categories including students who are placed in special education greater than 60% of the school week and students identified with disabilities of autism, emotional disturbance, mental retardation, learning disability, other health impairment, and speech/language impairment (M. Corey, personal communication, February 14, 2007). The statistical aspects of the three-part test will be presented in detail in Chapter 3. All three aspects of the three-part test had to be passed in at least 4 of the 8 special education categories before a racial subgroup was considered significantly overrepresented. If any race was significantly overrepresented, then the district met the first criteria of the federal policy in that they are considered overrepresented by a racial subgroup in special education. The district must then be examined further by the DESE to determine if they have inappropriate disability identification practices.

In the 2007-2008 school year, Missouri changed its criteria for determining overrepresentation. The state moved to using risk ratios (Bollmer et al., 2007) to determine disproportionality. Again the state looked at individual districts and racial groups. Any racial group with a risk ratio higher than 2.5 or lower than .25 in any of the categories would be considered overrepresented and subject to further review (M. Corey,

personal communication, April 10, 2008). The categories include overall special education identification rates and identification rates for autism, other health impairment, mental retardation, learning disability, language impairment, and emotional disturbance. Placement in special education greater than 60% of the time was removed as a category. There must also be at least 20 students in a subgroup and comparison group.

Missouri has used two different methods for determining if overrepresented districts have inappropriate identification practices. The first method utilized a comprehensive review process based on recommendations from the National Center for Culturally Responsive Educational Systems (personal communication, J. Hagar, Spring, 2006). The DESE formed a group of professionals from across the state who first conducted a file review to determine compliance with state regulations. They also conducted a survey of random certified staff within the district. Based on the results of the compliance review and the survey, the group conducted on-site interviews and focus groups. The results were discussed among the group and at the DESE and later disseminated to the school districts (personal communication, J. Alexander, Spring, 2007). While this method was comprehensive, it was too time intensive for the school districts and the DESE. Considering that a review had to take place every year for every school district who was found to be disproportionate and that some districts tended to be on the list year after year, the degree of effort involved was too high. The next review did not occur for another year and a half and was much simpler. This subsequent review consisted of an off-site targeted file review. Districts sent completed evaluations to the DESE, which were reviewed for compliance (personal communication, R. Lewis,

November 13, 2007). The next section will examine the research and theories behind disproportionality.

Research and Theories on Disproportionality

This section ties the history of discrimination in American education together with special education issues and the current policy on disproportionality. The first sub-section will examine disproportionality as it relates to race and SES. As stated previously race sometimes acts as a proxy for SES (MacMillan & Reschly, 1998; Skiba et al., 2005). Because the two demographic variables are so easily intertwined, much of the research literature on disproportionality has focused on the influence of SES (Coutinho et al., 2002; MacMillan & Reschly, 1998; National Research Council, 2002; O'Connor & Fernandez, 2006; Oswald et al., 2001; Skiba et al., 2005). The second sub-section will examine disproportionality as is relates to gender. Gender is an often over-looked variable, but an important one when considering the level of disproportionality between males and females. The third sub-section will examine how the concept of professionalism undergirds the discussion of disproportionality. The final sub-section will examine theories behind the causes of disproportionality among these subgroups and what can be done about it.

Race and SES with Disproportionality

There have been many articles examining the racial disparities in special education from theoretical and research based standpoints (Artiles, 1998; Blanchett, 2006; Daniels, 1998; Hosp & Reschly, 2004; Losen, 2002a, 2002b; MacMillan & Reschly, 1998; Naglieri & Rojahn, 2001; National Research Council, 2002; O'Connor & Fernandez, 2006; Oswald et al., 2001; Oswald et al., 1999; Reid & Knight, 2006). The

most significant of these studies was conducted by the National Research Council (2002). Their results were consistent with other studies in that African American students were generally overrepresented in special education, but only in the judgmental categories of disability such as learning disability, emotional disturbance, and mild and moderate mental retardation. The only other racial group that is overrepresented in special education, as compared to Caucasian students, is Native American students. "But the biggest discrepancy is Asian/Pacific Islander students, whose risk index is less than half of that of whites (OR = 0.44)" (National Research Council, 2002, p. 61). While African American and Native American students stand out as overrepresented, Asian/Pacific Islander and Hispanic students are underrepresented in special education in comparison to Caucasian students. Federal policy, however, is silent on what comparison group states should use. While some (Bollmer et al., 2007) suggest that best practice would be to compare one racial group to all other racial groups combined, there is no federal mandate to do so. Despite considerable variation in racial demographics from one school district to the next and one state to the next there are no states or regions that consistently place racial groups in special education at a higher than average rate (National Research Council, 2002). No state stands out as being more or less significantly overrepresented than another.

Several questions arise from these findings. One of the most important of which is, what is causing this phenomenon? Many theories have emerged, but none have been proven or accepted by scholars as the best explanation. Because special education keeps a disproportionate number of African American students out of the general classroom, some scholars call special education a form of sanctioned segregation (Blanchett, 2006;

Reid & Knight, 2006). Blanchett offers an explanation called white privilege. The idea is that Caucasians have been taught to think of racism as a specific act that a person commits against another race. White privilege says that Caucasians fail to see that they have special status in society and do not see the advantages they have simply because they are white.

Reid and Knight suggest that the theoretical models that underpin special education are the cause. "The predominant approach to special education, the 'medical model,' spawned the problem of disproportionality. It is a deficit-oriented perspective that is grounded in positivist science and undergirds (special) educational legislation (Bojoian & Reid, 2005) and practice" (Reid & Knight, 2006, p. 18).

The medical model looks at disease and seeks a cure. In the field of special education, the medical model sees a disability and looks for a cure. Reid and Knight propose a different paradigm called Disability Studies (2006). Rather than looking at a disability as being a characteristic of a person, it is looked at in the context of historical and contemporary oppression. Students are disabled by the culture and not because of individual characteristics. Theories such as those proposed by Reid, Knight, and Blanchett seek to change the paradigm of the debate. In their view the positivist paradigm comes from the historically dominant white culture and the only way to understand disproportionality is to reject positivism in favor of a social justice or historical paradigm. Contemporary systemized racism is viewed as unquestioned reality because it has been such historically.

Despite theories proposing to change the paradigm in which special education resides, the fact remains that special education is firmly entrenched in positivism.

Attempting to change the paradigm away from positivism does not alleviate the problem. Positivism purports that reality is separate from the individual (Coghlan & Brannick, 2005; Heppner & Heppner, 2004). Because it is separate from the individual, reality can be observed objectively. Within special education, positivism translates into the idea that a disability can be diagnosed without bias and variables such as environmental or economic deprivation, race, gender, and second language influence can all be controlled for. Disabilities are not diagnosed per se; they are uncovered or identified through testing and observation.

The observable data are clear that African Americans are overrepresented in disability categories where subjectivity of diagnostic practices has the most possibility of influencing the final diagnosis (MacMillan & Reschly, 1998). Furthermore, federal policy implies that race is the only significant variable in special education overrepresentation. The statistical data and federal policy, however, fail to account for a myriad of other variables, other than systematic racism and subjectivity, that could be influencing the data. Hosp and Reschly state, "In order to develop effective and efficient strategies to address disproportionate representation, a deeper understanding of the variables that may affect it is needed" (2004, p. 186). The most significant of these variables is SES (National Research Council, 2002; Skiba et al., 2005).

> Ethnicity and poverty are inextricably interwoven in our society and the [Office of Civil Rights] data (and other data sets used to inform us on overrepresentation) fail to break out cases of [Mild Mental Retardation], [Specific Learning Disability], and [Serious Emotional Disturbance] by ethnicity *and* social class. We are willing to wager that in such a matrix, the inter-correlation between ethnicity and social class would be moderately high and that social class, and not ethnicity, would explain more variance in the rates of detection for these high incidence disabilities (MacMillan & Reschly, 1998, pp. 19-20).

The theories behind the influence of poverty on special education diagnosis are also firmly entrenched in the medical model. Federal programs such as Title I and Head Start are based on the established premise that poverty has a strong detrimental effect on cognition, educational attainment and general health outcomes (National Research Council, 2002). The detrimental effects of poverty are well documented in the United States and internationally, including in countries where racial and ethnic diversity is much less pronounced (National Research Council, 2002). Impoverished home environments are associated with social and emotional deficits and achievement gaps between low SES and high SES homes (National Research Council, 2002).

O'Connor and Fernandez (2006) proposed the Theory of Compromised Human Development. This theory follows the line of thinking in the National Research Council (2002) study stating four premises. First, racial minorities are more likely than Caucasians to be poor. Second, early cognitive development is negatively affected by living in a state of poverty. Third, delayed development means delayed readiness for school. Fourth, inevitable delays in achievement dictate that these impoverished minority students will likely qualify for special education.

Because school districts are not required to report SES along with disability during annual reports to the state (Department of Elementary and Secondary Education, 2007a), research studies that effectively control for SES in minority overrepresentation have been difficult to conduct (Skiba et al., 2005). In addition, delays in achievement, the fourth premise in the Theory of Compromised Human Development, do not necessarily contribute to an increased risk for receiving a special education diagnosis (Skiba et al.,

2005). Skiba states that resulting studies that have attempted to control for SES have had mixed results. Some studies showed increased rates of minority representation in special education and others have shown a decrease in representation. Skiba's results were mixed as well.

> In sum, the relationships among race or ethnicity, poverty, and the disproportionate placement of minority students in special education are highly complex, and their directionality often defies expectation. These data are consistent with previous investigations in suggesting that poverty is only one part, and perhaps not a very central part, of a complex of factors predicting African American overrepresentation in special education (Skiba et al., 2005, p. 142).

One limitation, as acknowledged in their own study, is that SES and race are controlled for using district-level data rather than student-level data. They state that district-level data have the potential to over- or underestimate the interaction between poverty and race and that an analysis of student-level data might better establish the connection.

The interplay between race and poverty in racial disproportionality in special education is complex and difficult to research. Race and poverty are not the only subgroups that show significant overrepresentation in special education. The next section will examine overrepresentation with gender.

Gender and Disproportionality

Ironically, while there is considerable concern regarding minority overrepresentation in special education, there appears to be little to no concern for male overrepresentation. Nationally, males outnumber females in special education by a margin of two to one (Coutinho & Oswald, 2005; Coutinho et al., 2002; Wehmeyer & Schwartz, 2001). In some disability categories, male overrepresentation is even more

pronounced. Male students outnumber female students by a margin of three to one in the emotional disturbance category (Coutinho et al., 2002; National Research Council, 2002). There is little variation from state to state on the levels of male overrepresentation in most disabilities (Coutinho & Oswald, 2005). Coutinho and Oswald, however, found that there was significant variation from state to state on representation levels of males with learning disabilities and emotional disturbance. Despite these variations, males always outnumber females. There are several hypotheses surrounding male overrepresentation (Wehmeyer & Schwartz, 2001). One hypothesis is that boys are more susceptible to genetic disorders and biologically more likely to have a disability. While there are some specific disorders that only males can have, these disorders are not common and cannot account for the amount of overrepresentation. There is evidence that reading disorders are heritable, but the link to gender does not exist (Wehmeyer & Schwartz, 2001). Males are no more at risk than females. A second hypothesis is that boys tend to be more rambunctious and vocal and therefore stand out more to teachers. Girls tend to have more internalizing problems, including depression or suicidal ideation (Coutinho & Oswald, 2005; Wehmeyer & Schwartz, 2001), which do not get noticed as easily. The problem is that this theory is largely unprovable unless females who are not diagnosed, or found not to qualify for special education, are objectively evaluated and found to have a disability. Research studies around emotional disturbance have not supported this theory (Coutinho & Oswald, 2005). A third explanation is that there appears to be a gender bias in diagnosis and placement in special education (Wehmeyer & Schwartz, 2001).

Based on the literature present on racial and SES overrepresentation, it would seem logical to conclude that male overrepresentation would be a significant concern and

the hypothesis of bias would be referring to bias against boys. Like disproportionality among racial groups, the basic assumption of overrepresentation of males is that there should be no difference between the genders in diagnosis if bias does not exist. The opposite, however, appears to be the case. Coutinho and Oswald state, "The concern about gender disproportionality in special education…is often about under- rather than overrepresentation" (2005, p. 7). It seems that the biggest concern in gender disproportionality lies around the idea that female students with disabilities often go unidentified. What is clear, is that the level of data analysis and the controlling of confounding variables when studying overrepresentation needs to be improved (MacMillan & Reschly, 1998).

Variables in Disproportionality

As was stated in chapter one, variables used in national and regional studies are often poorly defined (MacMillan & Reschly, 1998). While the federal government provides definitions for each disability and must approve state interpretations, it is the prerogative of the states to further define and interpret the federal definitions. As a result, a student with a learning disability in one state may not have a learning disability in another state. This kind of variation makes it impossible to accurately collapse data from many states into one data set and maintain the integrity of disability definitions. The definition of race is also problematic (MacMillan & Reschly, 1998). Each district is responsible for collecting its own data regarding race. As a result, how race is reported can vary for each district. In one district, the parent may report it. In another district, the registrar may report it. There is no guarantee that a parent and a registrar would report the same race on a single student. In addition, racial data are still collected as discrete,

mutually exclusive categories (Department of Elementary and Secondary Education, 2007a). These categories are not reflective of an increasingly biracial and multiracial American society (MacMillan & Reschly, 1998). The third problem, variable interaction, has already been addressed. Because data in national and regional studies are aggregate, it is impossible to effectively control for variable interaction. If ethnicity has become a proxy for SES (MacMillan & Reschly, 1998; Skiba et al., 2005) in American society, then the interaction between race and SES is considerable. In order to properly study disproportionality, race and SES must be considered together and these variables must be controlled for in any corresponding study. Those studies where SES and race were controlled for, are still largely regional and national studies that fail to control for the other problems involving variable definitions (National Research Council, 2002; Skiba et al., 2005). Even if researchers could control for all possible variables and variations in definitions involved in overrepresentation, there is still no consensus on interventions that will effectively eliminate the problem. The next subsection will examine how professionalism has an impact on disproportionality.

Professionalism and Disproportionality

As stated previously, the fundamental assumption behind the discussion of disproportionality is that the percentage of students in the population in a particular subgroup should be the same percentage in the special education population if there is no discrimination taking place. While not explicitly stated, this assumption implies that the staff involved in identifying students with disabilities behaves in a professional manner. The staff must be able to eliminate all personal bias so that no overrepresentation of a

subgroup will take place. This implication is confirmed by the National Association of School Psychologists (NASP) in their standards for professional ethics. NASP states:

> School psychologists recognize (in themselves and others and in the techniques and instruments that they use for assessment and intervention) the subtle racial, class, gender, and cultural biases they may bring to their work and the way these biases influence decision-making, instruction, behavior, and long-term outcomes for students. School psychologists work to reduce and eliminate these biases where they occur (National Association of School Psychologists, 2000, p. 46).

Since special education is grounded in positivist science (Reid & Knight, 2006) and the medical model, the professionals responsible for identifying students with disabilities are the equivalent of the researcher with specialized knowledge. The traditional models of professionalism assume that the professional has expert knowledge and their opinion is not questionable (Nixon, Martin, McKeown, & Ranson, 1997). Nixon, Martin, McKeown, and Ranson state,

> Based on the of professional autonomy and status, the relationship between professionals and their publics was not an issue: 'doctor knows best' was not just a platitude: it was an underlying code whereby the right to make decisions on behalf of majorities, to exercise judgment on behalf of others, and to pursue the larger aim of providing goods and services in a fashion calculated to obtain public approval, was ceded to particular occupational groups (Nixon et al., 1997, p. 7).

Professionalism as it has been historically conceived would leave the decisions for diagnosis of a disability to the experts with the assumption that they will do their job without prejudice or bias. The professional is then expected to come to the conclusion that any qualified professional would come to based on the evidence. Faulty conclusions occur when the professional fails to look at or gather the data without bias.

Jacob-Timm and Hartshorne (1998) identify three sources of bias that the professional is responsible for controlling. The first form of bias is test bias. The

professional must ensure that the instruments used to gather the data, such as intelligence or behavioral assessments, are created so as to eliminate bias. While school professionals often do not create the assessments themselves, they are responsible for ensuring that the assessments they choose to use are without bias. The second form of bias that the professional is responsible for controlling for is bias in application. Even if the instruments used to collect data are without bias, the way they are used may result in bias. For example, there are many different types of intelligence tests, but each has its own disadvantages and advantages. The professionals in the schools must ensure that the tests they choose are appropriate. A student with significant motor difficulties could have difficulty with a test that relies heavily on manipulatives. The results may not reflect their true intellectual ability. The assessments must also be given under optimal conditions (Jacob-Timm & Hartshorne, 1998). If the student is sick or the school band is playing in the next room during the assessment, the results may be skewed. The third type of bias mentioned by Jacob-Timm and Hartshorne involves the consequences of the assessment. If the outcome or conclusion of the assessment results in a subgroup being overrepresented in an inferior program, then the whole process is considered bias.

Professionals in the schools are expected to identify students with disabilities without bias so that subgroups do not become overrepresented (Jacob-Timm & Hartshorne, 1998). The implication is that if the professionals are behaving as professionals, then improper identification and systematic bias should not occur.

Solutions to the Problem

The primary assumption that must be mentioned upfront in this subsection is that something can actually be done to eliminate disproportionality in special education. Since

there is no proof that bias or biology are the exclusive or even interacting causes of disproportionality, it is difficult to offer solutions. Theoretical solutions have been offered by many authors. Some of those solutions, especially those that center around bias as the cause, focus on diversity training and pre-referral intervention systems (Harris-Murri, King, & Rostenberg, 2006; Losen, 2002a; Serna, Forness, & Nielsen, 1998). Harris-Murri, King, and Rostenberg (2006) state that teaching a student population with a diverse background requires a curriculum that includes the diverse background of the students. They also state,

> Such approaches are in response to the use of standard curriculum that is the same for all students, delivered in the same manner, and over the same amount of time, ignoring the individual and cultural strengths of those for whom it is designed (Harris-Murri et al., 2006, p. 785).

Diversity training does not necessarily assume that bias is intentional, but assumes that the bias is correctable.

The solution of establishing pre-referral intervention (Harris-Murri et al., 2006; Serna et al., 1998) systems is consistent with changes in IDEA 2004. When districts are found to be racially disproportionate and to be inappropriately diagnosing students, they are required to spend 15 percent of their federal special education monies on early intervening services (Department of Education, 2006). Federal policy assumes that this monetary reassignment will alleviate disproportionality or at least the inappropriate diagnosis of students. Both diversity training and pre-referral interventions are plausible suggestions, but neither have proven effective in reducing overrepresentation. Daniels states, “Although a number of studies and reports have provided recommendations or proposed solutions, so far no statistically significant changes have occurred in minority

representation in either gifted or special education programs" (1998, pp. 42-43). The solution to subgroup overrepresentation in special education may lie, instead, within a single district. It is possible that the solution is elusive because the solution needs to look different in each district just as the data collection and variables look different in each district.

> A good deal can be learned by collecting race/ethnicity data and keeping track of special education referrals, identification rates and categories, and restrictive placements by race. The staff should reflect on the statistical disparities and be charged with finding innovative ways both to reduce the disproportionate numbers and improve the quality of services provided (Losen, 2002a, p. 46).

Losen is suggesting that there is more to learn and district and school staff must learn to be reflective about their own practices. District level and school specific data that inform the practices of individual teachers will reveal a solution that is appropriate and applicable to that district and school.

Summary of Literature Review Chapter

Considering its humble beginnings, the American education system has evolved into one of the most influential government agencies in American society. Its evolutionary process has taken it from education only for the privileged to education for all regardless of race, SES, gender, and disability. Ideals of social justice in American society have evolved along with education, sometimes playing out within education before the rest of society. The result of these environmental inputs (Marshall & Gerstl-Pepin, 2005) has been a myriad of legislation and policy changes that affect the day-to-day operations of state education agencies and school districts.

The inevitable intersection of issues of discrimination against racial minorities and students with disabilities has been the context of much debate and controversy. The overrepresentation of racial minorities in special education is controversial and complex. Problems with confounding variables, inconsistent definitions of race and disability, and disagreements about the approach of special education plague the debate. Federal policy has determined that something must be done to alleviate the problem, but has offered no research-based solutions.

The beauty of the American education system is its diversity, not only in its student population but also in the state and local systems. While subgroup overrepresentation in special education is a national problem, the diverse state and local systems may come to solutions to the overrepresentation problem independently by experimentation. These solutions may not ever emerge in a nationalized system where ingenuity and risk-taking can be discouraged. This chapter has attempted to provide a thorough review of the history, policy, and research behind subgroup overrepresentation in special education. The next chapter will examine the methods this study will use to examine the issue.

Chapter Three: Methods

The purpose of this chapter is to provide detail on the design and methods that were used to conduct this study. It will start with a statement of the problem addressed in this study and a brief review of the purpose. The second section will review the research questions and hypotheses. The third section will examine the research design. The fourth section will describe the setting where the study took place, followed by data collection methods. The sixth section will discuss the analyses of data collected. The final section will discuss the limitations of this study.

Statement of the Problem and Review of the Purpose

MacMillan and Reschley (1998) state that greater specificity is needed when studying racial disproportionality in special education. Since their article was written, several researchers have attempted to study the interaction of race and poverty in special education identification, but with mixed results (Skiba et al., 2005). All have examined the issue using state, regional, or national databases where all of the data are reported in aggregate form. None of these databases were able to provide data at the student level, which would more effectively control for confounding demographic variables (Skiba et al., 2005). While state-level data can help control for variations in disability definitions, state, regional, and national studies using aggregate data cannot effectively control for practices in recording race upon enrollment or for the effects of SES the way local student-level data can.

The purpose of this study is to use student-level data to closely examine the problem of disproportionality within a single district and to determine if the practice of

professional judgment is a cause of that disproportionality. This level of specificity will enable this district to better pinpoint how race, gender, and SES interact within special education identification and if any demographic categories stand out as potentially needing intervention. If professional judgment is used more in one demographic category versus another, then the focus of intervention for alleviating disproportionality may need to be on that demographic category. This greater level of specificity (MacMillan & Reschly, 1998) will allow the district to better focus its resources for intervention.

Review of Research Questions and Hypotheses

This study addresses three research questions and six corresponding hypotheses. These questions and hypotheses help further define the study and narrow the focus.

Research questions

1. How does students' likelihood for disability identification differ by race/ethnicity, gender, and socioeconomic status?
2. How does students' likelihood for disability identification differ by race/ethnicity, gender, and socioeconomic status and the type of disability?
3. Is professional judgment used more often with African American, male, or low SES students when diagnosing a disability?

Hypotheses

Hypotheses One, Two, and Three correspond with Research Question One. Hypotheses Four and Five correspond with Research Question Two. Hypothesis Six corresponds with Research Question Three.

1. African Americans are overrepresented in special education for the district under study when using the Missouri criteria regardless of SES and gender.

2. Males are overrepresented in special education for the district under study when using the Missouri criteria regardless of SES and race.
3. Low SES students are overrepresented in special education for the district under study when using the Missouri criteria regardless of race and gender.
4. There is a difference among various types of disability in the pattern of overrepresentation in special education by race, SES, and gender for the district under study.
5. Among students with a disability, emotional disturbance is more likely to be diagnosed with African American students, low SES students, and male students for the district under study.
6. Professional judgment is more likely to be used with African American students, low SES students, and male students when identifying a learning disability for the district under study.

Research Design

While many studies exist that examine disproportionality (Losen, 2002b; National Research Council, 2002; Oswald et al., 1999) and some exist controlling for confounding variables like SES (Skiba et al., 2005), none exist using student-level data. The basic design of this study was a secondary quantitative analysis of student level data in a single school district. The setting was a district in Missouri that was identified by the Department of Elementary and Secondary Education (DESE) as being overrepresented with African American students in special education. It was a population study within this single school district.

Because this study restricted the data collection to a single school district, many limitations from previous studies were minimized if not eliminated. The use of student level data enabled effective control of the interaction between SES and race. "One might expect that analyses using individually based poverty estimates could provide a more precise assessment of the contribution of poverty to racial disparity in special education service" (Skiba et al., 2005, p. 142). Using a single school district addressed other confounding variables, specifically, disability and race definitions (MacMillan & Reschly, 1998). Disability definitions were controlled for because the state definitions of disability are the only definitions used and the school district's interpretation of those definitions are consistent within the district. The certified professionals responsible for leading the diagnostic teams met on a monthly basis to discuss issues of consistency in diagnostic practices and frequently consulted each other on individual students. Race was more difficult to control for.

There is a general understanding in data collection that the fewer the number of people who input the data, the more consistent the data. The problem with the regional and national studies is that every district has different practices in recording the race of a student (MacMillan & Reschly, 1998). Even within a single district, it is impossible to achieve perfect consistency even if only one person registers every student. Within a single district, however, the individuals who enter the racial data can be trained together and can ask each other questions to maintain consistency. These practices both occurred in the district studied. The registrars who record the information were trained annually on registration and data entry procedures and frequently communicated with each other and administration on their practices.

Setting

This research study took place in a medium size school district in the Midwest. The school district population varied between 16,000 and 17,000 students on any given day, with many more students transferring in and out of the school district during the year. Caucasian students made up 69.5% of students and African American students made up 21.9% of the overall population. The rest were Asian (5%), Hispanic (3.3%), and American Indian (.4%). The school district had approximately 2,500 special education students and had been identified by the DESE as having a disproportionate number of African American students in special education. African Americans made up 31.0% of the special education students. In addition, the district had been identified as having a disproportionate representation of African American students in six of seven subcategories of special education using the Missouri criteria in place prior to 2007-2008. The school district was overrepresented with African American students with an educational placement of greater than 60% of the school week in special education services and in diagnoses of emotional disturbance (44.4% were African American), learning disabilities (35.7%), speech/language impairments (29.0%), other health impairment (28.2%), and mental retardation (41.6%). Autism was the only subcategory in which the school district was not overrepresented with African Americans. African Americans were somewhat underrepresented in autism (9.2%). It is important to note that this school district was overrepresented by African Americans in the diagnoses of other health impairment and speech/language impairment even though African Americans are not typically overrepresented in these two categories nationally (National Research Council, 2002). After the state changed its formula for determining disproportionality to

the risk ratio in 2007-2008, this district was only found to be disproportionate with African Americans in the emotional disturbance category. For the purposes of this study, the previous and more statistically rigorous formula from the DESE was used to determine overrepresentation, although the risk ratio was calculated as well to show the level of overrepresentation within special education and the disability categories.

This school district underwent a program evaluation by the DESE in 2006 and it was determined that while there was disproportionality, diagnoses were not made inappropriately. The district was not required to expend 15% of its Part B monies on early intervention services as dictated by federal statute. It was reviewed again in the fall of 2007 and the results were the same. The next section will discuss methods of data collection.

Data Collection

All data was retrieved from existing data sets. The school district collected and kept demographic and special education information on all students dating back several years. To access these existing data sets, the district required completion of a series of applications and assurance statements. The assurance statements were designed to maintain the anonymity of the district and students. These applications were reviewed by the district and approved. Once approved, demographic data including race, gender, free and reduced lunch status (SES), and disability were retrieved for all students in the school district, kindergarten through twelfth grade. Since these data change on a day-to-day basis as students come into and leave the district, all data was retrieved from the last day of school of the 2006-2007 and 2007-2008 school years and included students who had transferred in and out of the school district during the two years. The student-level data

was combined from the two years to create an unduplicated count of all the students who had been in the school district. In addition to the demographic and disability information, all of the initial evaluations conducted during the 2006-2007 and 2007-2008 school years were gathered. Specifically, the final primary diagnosis and a data field indicating whether the diagnostic team used professional judgment in identifying a disability were retrieved. Data from each year was combined to create a single data set with unduplicated students. All student names and identification numbers were removed once the evaluation data were added to the demographic data. The next section will discuss methods of data analysis.

Analysis of the Data

Data analysis was conducted in several different ways. The first set of analyses answered the first and second research questions and the first four hypotheses. First, each demographic subcategory was analyzed in a manner consistent with how the state analyzed disproportionality prior to 2007-2008, but accounting for each subcategory, race, gender and SES, separately. The state used a three-part test to assess for disproportionality. All three parts of the test had to be true for each category to be considered overrepresented. The categories included general special education placement, students receiving services in a special education class at least 60% of the week, and students diagnosed with autism, emotional disturbance, other health impairment, learning disability, speech or language impairment, or mental retardation. At least four of these eight categories had to be disproportionate according to the three-part test for the district to be considered disproportionate overall in special education.

The first part of the Missouri three-part test is a z-test for significance. If the percentage of special education students who were part of an individual demographic is significantly higher than the percentage of students who were part of that same demographic in the regular education, then the first part of the test is true. For example, the percentage of special education students who are African Americans was compared to the percentage of regular education students who are African American. The second part of Missouri's test for disproportionality is a "P plus 10%"—that is, the percentage of special education students who are in a demographic category must be at least 10% higher than the percentage of students in the general population in that demographic category (M. Corey, personal communication, February 14, 2007). For example, if 21.9% of the general population is African American, then 24.2% (21.9% x 1.1) of the special education population must be African American for P plus 10% to be true. The third part of the test is that there must be at least 10 students in the category.

First, the three-part test was conducted for African Americans, males, and low SES students independently. The three-part test was then run for combinations of the demographic variables. The test was run for the following demographic combinations: low SES and non-low SES African Americans, African American males and females, low SES males and females, low SES non-African Americans, non-low SES males, and non-African American males.

Separate from and unrelated to the three-part test, risk ratios (Bollmer et al., 2007) were calculated for each of the demographic subgroups for special education overall and six disability categories including, autism, emotional disturbance, other health impairment, learning disability, speech or language impairment, and mental retardation.

The risk ratios were calculated to describe the level of overrepresentation, not to establish that overrepresentation exists. The risk ratio was calculated using the number of students in a demographic subgroup in the school district (n_1), the number of students in that subgroup in special education (n_2), the number of students not in that subgroup in the school district (n_3), and the number of students not in that subgroup in special education (n_4). The formula for calculating the risk ratio is (n2/n1)/(n4/n3). The resulting risk ratio showed how much more likely the subgroup was to receive special education services compared to students not in that subgroup. The risk ratio was given to show the extent of overrepresentation (or underrepresentation) for a subgroup, not to determine whether the subgroup was actually overrepresented. Risk ratios are not part of the Missouri three-part test.

In addition to the Missouri three-part test and the risk ratios, emotional disturbance was examined with a regression analysis to address the fifth hypothesis. A stepwise binary logistic regression (Field, 2005) was used to examine the demographic variables and identification as a student with an emotional disturbance. Field states that a logistic regression is best used when the outcome variable, status as a student with an emotional disturbance in this case, is dichotomous. The data set was restricted to students receiving special education services. The demographic variables, race (African American or non-African American), gender, and SES (free and reduced lunch or not free or reduced lunch), were used as the independent variables. Identification as a student with an emotional disturbance was used as the dependent variable. The variance, p-value, and Exp(B) for each independent variable were examined to determine if the variables were

associated with being identified with an emotional disturbance while controlling for the other demographic variables.

The final analysis involved examining the diagnostic practice of professional judgment within the district and was intended to answer the final research question and the sixth hypothesis. The collected demographic variables were used to conduct a stepwise binary logistic regression (Field, 2005).

The logistic regression examined the demographic variables and use of professional judgment when identifying a learning disability. The combined data from the initial evaluations completed in the 2006-2007 and 2007-2008 school years was used in this analysis. The demographic variables race (African American or not African American), gender, and SES (free and reduced lunch or not free or reduced lunch) were used as independent variables in the stepwise binary logistic regression analysis. The use of professional judgment in diagnosing a learning disability was the dependent variable. The data set was restricted to students diagnosed with a learning disability during an initial evaluation. The variance, p-value, and Exp(B) for each independent variable were examined to determine if the variables were associated with the use of professional judgment when being identified with a learning disability while controlling for the other demographic variables.

Limitations

The nature of this study lends itself to several limitations. The first limitation involves the narrow focus of the study. Because the study was limited to a single school district, the ability to generalize the results to other school districts or at the regional level is diminished. There is no way to accurately predict whether the same results would

manifest in other school districts, especially districts with different population make-ups. It also does little to further the debate at the national level. This last year, however, Missouri has begun collecting student-level data from every school district, enabling this study to be replicated in every school district in Missouri and for the entire state.

A second limitation regarding generalizability lies in disability definitions (MacMillan & Reschly, 1998). The study could be replicated in any district that collects student-level data, but data cannot be combined across states. Each state defines disability categories differently, thus making any combining of the data across states impossible if the integrity of the data is to be maintained. Another limitation involves racial definitions. This study collapsed race into African American and non-African American. Such a level of simplicity fails to account for multiracial students and different racial minorities. Data is collected only in discrete racial categories. A third limitation is the way SES is collapsed into low SES versus not low SES based on eligibility for the free and reduced lunch program. Salaries of individual families are not collected making it difficult to judge the full impact of SES on disability identification. This limitation, however, is a significant improvement over prior studies (Skiba et al., 2005) where SES was only measured across districts where a whole district was considered low SES rather than looking at individual students. A fourth limitation involves the analysis of professional judgment when diagnosing learning disabilities. There were an adequate number of students who were diagnosed using professional judgment. Once the demographic variables were introduced, however, the number of cases within each demographic category was small. For example, there were only 14 African Americans who were diagnosed using professional judgment. There were the same number of males and only

19 low SES students. These low numbers may have affected the outcome. This problem could be alleviated if data were collected over more than two years. The next section will conclude the methods chapter.

Summary of Methods Chapter

The purpose of this chapter was to explain the methods by which this study was conducted. The design of this study was a secondary analysis of data from a single school district. The setting was a single district within the state of Missouri that was identified by the DESE as overrepresented in special education with African American students. The analysis of overrepresentation, however, was not restricted to African Americans, but was expanded to include gender and SES so that confounding variables were more easily controlled for. The data was analyzed using the method established by the DESE in 2006-2007 followed by two logistic regressions where the independent variables were race, gender, and SES. The dependent variables included identification as a student with an emotional disturbance and whether professional judgment was used to identify a learning disability.

Chapter 4: Results of Analysis of Data

The purpose of this chapter is to present the results of the statistical analyses conducted to answer the research questions and address the hypotheses of the study. The purpose of this study was to examine subgroup disproportionality within special education in a single school district while placing special emphasis on emotional disturbance and on the judgment of professionals in identifying a learning disability. The first section will present the final demographics of the overall data sets. The remaining results will be presented in the order of the research questions and corresponding hypotheses.

Research Question One focused on the extent of racial, income, and gender overrepresentation within special education as a whole. This question was examined using two separate analyses including risk ratios and the Missouri criteria for determining overrepresentation. Risk ratios were calculated in this study to describe the severity of overrepresentation and are unrelated to the Missouri criteria. The Missouri criteria involve a three-part test. Part one is a z-test. The z-test compares the percentage of special education students who are of a demographic category to the percentage of regular education students who are of that same demographic category. If the percentage in special education is significantly higher than the percentage in regular education, then part one of the test is "true." For example, a z-test comparing the percentage of special education students who are African American to the percentage of regular education students who are African American was conducted. In part two, the percentage of special education students who are in a demographic category must be at least 10% higher than

the percentage of students in that demographic category in the general population. In part three, there must be a minimum of 10 students in the demographic category. If all three parts of the test are true for at least four special education categories, then the demographic subgroup is considered overrepresented in special education overall. The special education categories are special education placement, students receiving services in a special education class at least 60% of the week, and students diagnosed with autism, emotional disturbance, other health impairment, learning disability, speech or language impairment, and mental retardation.

Research Question Two examines the extent of overrepresentation using the same demographic variables, but looking at individual disabilities. The same Missouri criteria are used in the analysis. An additional analysis was conducted, looking at the predictive power of the demographic variables in identifying a student with an emotional disturbance. Research Question Three examines the same demographic variables, but looks at the predictive power of these variables in determining the use of professional judgment when a student is classified as having a disability.

Demographics Represented in Data Sets

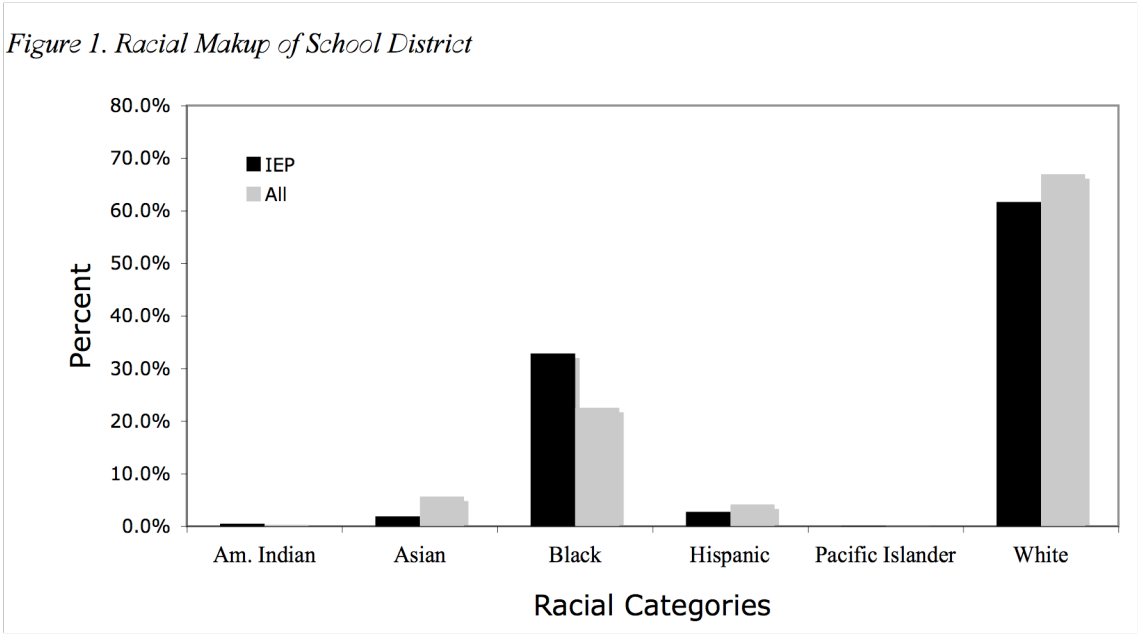
Data from the 2006-2007 and 2007-2008 school years were combined into a single data set that included race, gender, whether the students received a free or reduced lunch (SES), disability category, and level of placement in special education. This data set included an unduplicated count of all students in the school district over the two years. A second set of data was retrieved from the same two school years and combined with the first data set. The second data set included students who had been evaluated for special education for the first time. This data set included the disability the students were

identified with (learning disability, mental retardation, etc.) and a field indicating whether professional judgment was used to make the diagnosis. Analysis of the data revealed inferential statistics useful in answering the research questions.

Data Set One

Data set one consisted of all students in the population of the school district for the 2006-2007 and 2007-2008 school years. When the two school years were combined, there were a total of 23,404 students that attended school in grades K-12. The overall population had 12,096 males (51.7%) and 7,496 students take part in the free or reduced lunch program (32.0%). There were 5,289 African American students, which made up 22.6% of the population. See Figure 1 for the complete racial makeup of the school district.

Figure 1. Racial Makup of School District



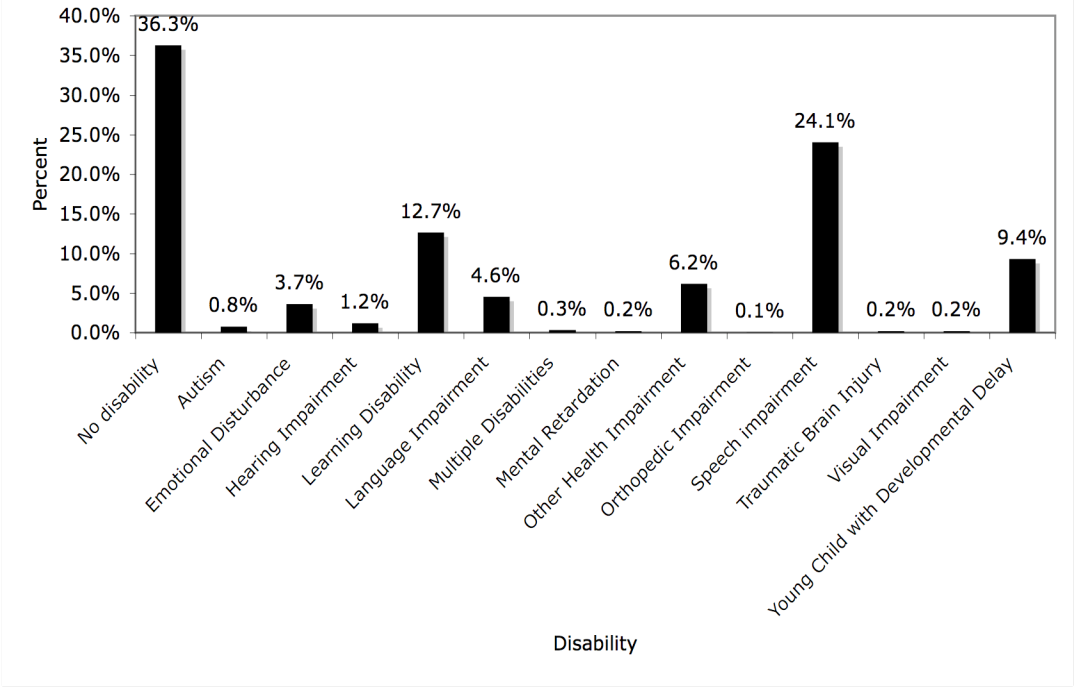
Data set one also consisted of students receiving special education services. There were 2,725 students who received special education services on an Individualized Education Plan (IEP), which was 11.6% of the student population in K-12. The special

education population consisted of 1,837 males (67.4%). Of special education students, 1,381 (50.7%) students participated in the free and reduced lunch program. There were 897 African American (32.9%) students receiving special education services. See Figure 1 for the racial makeup of IEP students.

Data Set Two

Data set two consisted of all students in the population of the school district for the 2006-2007 and 2007-2008 school years who received an evaluation for special education services for the first time, an initial evaluation. There were 1,229 initial evaluations in the school district during the two years of data collection. Among those evaluations, 369 students (30.0%) were African American, 509 (41.4%) were low SES, and 778 (63.3%) were male. The initial evaluations resulted in 156 students being diagnosed with a learning disability. See Figure 2 for the percentages of the different diagnoses made among the initial evaluations.

Figure 2. Initial Evaluations



The next sub-section will examine the results as they relate to the first research question.

Research Question One

Research Question One stated, how does students' likelihood for disability identification differ by race/ethnicity, gender, and socioeconomic status? This research question also had three corresponding hypotheses, each of which will be addressed in this section.

Hypothesis One

Hypothesis one stated that African Americans were overrepresented in special education using the Missouri criteria regardless of SES and gender in the district under study. A series of eight z-tests were conducted to address part one of the Missouri test. The z-tests were 2-tailed with alpha set to .05. The critical value z-statistic was 1.96 for

all tests. Any z-value over 1.96 indicated a significant difference between the proportion of special education students who were of the demographic subgroup and the proportion of regular education students who were of the demographic subgroup. The first z-test compared the proportion of special education students who were African American to the proportion of the regular education students who were African American. The remaining z-tests compared the percentage of students in each of seven categories within special education who were African American with the percentage of remaining students in the general population (not in the category) who were African American. The seven categories included mental retardation, emotional disturbance, learning disability, speech or language impairment, other health impairment, autism, and placement in special education greater than 60% of the time. In all of the categories except autism, the z-tests were significant at the .05 level for African American students. See Table 1 for the calculated z-values for all the demographic subgroups and their representation in special education.

Table 1

Z-Values for Demographic Subgroups: Part 1 of Missouri Test

	Number of Students		
Subgroup	In Special Education (Subgroup/All in SpEd)	Not In Special Education (Subgroup/Not in SpEd)	Z-Value
Black	32.9% (897/2,725)	21.2% (4,392/20,679)	13.70*
Males	67.4% (1,837/2,725)	49.6% (10,259/20,679)	17.48*
Low SES	50.7% (1,381/2,725)	29.6% (6,115/20,679)	22.20*
Black, Low SES	25.7% (700/2,725)	14.1% (2922/20,679)	15.68*
Black, not Low SES	7.2% (197/2,725)	7.1% (1,470/20,679)	0.23
Black, Males	21.8% (593/2,725)	10.2% (2,119/20,679)	17.65*
Black, Females	11.2% (304/2,725)	11.0% (2,273/20,679)	0.26
Non-Black, Male	45.7% (1,244/2,725)	39.4% (8,140/20,679)	6.30*
Low SES, Males	32.7% (891/2,725)	14.2% (2,942/20,679)	24.49*
Non-Low SES Males	34.7% (946/2,725)	35.4% (7,317/20,679)	-0.69
Low SES, Non-Black	25.0% (681/2,725)	15.4% (3,193/20,679)	12.61*
Low SES Females	18.0% (490/2,725)	15.3% (3,173/20,679)	3.56*

* Note: Statistically significant at .05 level

The difference between the proportions in all categories except autism was at least 10% satisfying part two of the Missouri criteria. All categories contained at least 10 students satisfying part three of the Missouri criteria. Since African Americans were

overrepresented in at least four categories, African Americans were overrepresented overall using the Missouri criteria.

Subgroups of African Americans were also compared to all other students in the population to determine if African Americans were overrepresented when considering race and gender. The following pairs were analyzed using the Missouri three part test: African Americans of low SES, African Americans not of low SES, African American males, and African American females.

African Americans of low SES. For African Americans of low SES, the z-tests were significant at the .05 level for all of the categories except autism. The difference between the proportions in all categories except autism was at least 10% satisfying part two of the Missouri criteria. All categories contained at least 10 students satisfying part three of the Missouri test. Since African Americans of low SES were overrepresented in at least four categories, African Americans of low SES were overrepresented overall using the Missouri criteria.

African Americans not of low SES. For African Americans not of low SES, the z-tests were not significant at the .05 level for any of the categories. The difference between the proportions was at least 10% only in speech/language impairment. All categories except autism contained at least 10 students satisfying part three of the Missouri test. Since African Americans not of low SES were not overrepresented in at least four categories, African Americans not of low SES were not overrepresented overall using the Missouri criteria.

African American males. For African Americans males, the z-tests were significant at the .05 level for all of the categories except autism. The difference between

the proportions in all categories except autism was at least 10% satisfying part two of the Missouri criteria. All categories contained at least 10 students satisfying part three of the Missouri test. Since African Americans males were overrepresented in at least four categories, African Americans males were overrepresented overall using the Missouri criteria.

African American females. For African Americans females, the z-tests were significant at the .05 level for two of the categories. The categories where the z-tests were significant were mental retardation and placement in special education greater than 60% of the week. The difference between the proportions was at least 10% in mental retardation, emotional disturbance, learning disability, and placement in special education greater than 60%. All categories except autism contained at least 10 students. Since African Americans females were not overrepresented in at least four categories, African Americans females were not overrepresented overall using the Missouri criteria.

When looking at overrepresentation in special education, African Americans were clearly overrepresented when examined independently. When subgroups of African Americans, however, were analyzed, the data indicated that African Americans were not overrepresented in special education when they were female or not low SES. Hypothesis One is not supported. African Americans are not overrepresented regardless of SES and gender. SES and gender appear to play a much more important role than does race when it comes to identification of a student with a disability. The reason for the level of overrepresentation among African American students appears to be a function of poverty over race. African American students in the district under study have a much higher rate

of poverty than non-African Americans, thus race appears to have acted as a proxy (Skiba et al., 2005) for SES.

Hypothesis Two

Hypothesis Two stated, males are overrepresented in special education using the Missouri criteria regardless of SES and race. The Missouri three-part test was conducted for males and several subgroups of males to address this hypothesis. See Table 1 above for the calculated z-value for overall special education representation. For males, the z-tests were significant at the .05 level for all of the categories except mental retardation. The difference between the proportions in all categories was at least 10% satisfying part two of the Missouri criteria. All categories contained at least 10 students satisfying part three of the Missouri test. Since males were overrepresented in at least four categories, males were overrepresented overall using the Missouri criteria.

Subgroups of males were also compared in order to determine if males were overrepresented when considering race and SES. The following pairs were analyzed using the Missouri three part test: African American males, non-African American males, males of low SES, and males not of low SES. Results for African American males were shared in the previous subsection and the subgroup was found to be overrepresented overall using the Missouri three-part test.

Non-African American Males. For non-African American males, the z-tests were significant at the .05 level for special education overall, speech or language impairment, other health impaired, and autism. The difference between the proportions in those same four categories was at least 10% satisfying part two of the Missouri criteria. All categories contained at least 10 students satisfying part three of the Missouri test. Since

non-African American males were overrepresented in four categories, non-African American males were overrepresented overall using the Missouri criteria.

Males of low SES. For males of low SES, the z-tests were significant at the .05 level for all of the categories. The difference between the proportions in all categories was at least 10% satisfying part two of the Missouri criteria. All categories contained at least 10 students satisfying part three of the Missouri test. Since males of low SES were overrepresented in at least four categories, males of low SES were overrepresented overall using the Missouri criteria.

Males not of low SES. For males not of low SES, the z-tests were significant at the .05 level for only autism. For part two of the Missouri criteria, the difference between the proportions in autism was at least 10%. For part 3 of the Missouri test, only mental retardation and emotional disturbance did not have at last 10 students in the category. Since males not of low SES were not overrepresented in at least four categories, males not of low SES were not overrepresented overall using the Missouri criteria.

Results for Hypothesis Two were more mixed than Hypothesis One. Like Hypothesis One, males were overrepresented in special education when examined independent of race and gender. When subgroups of males were analyzed, however, males were not overrepresented when they were not low SES. Hypothesis Two is partially supported. Males are overrepresented regardless of race, but they are not overrepresented regardless of SES in the district under study. The reason for these mixed results is difficult to ascertain. Males may be overrepresented regardless of race because of the influence of SES again. Since the analysis of gender and racial subgroups did not account for SES, race may again be acting as a proxy (Skiba et al., 2005) for SES.

Hypothesis Three

Hypothesis Three stated, low SES students are overrepresented in special education using the Missouri criteria regardless of race and gender. To address this hypothesis, the Missouri criteria were applied to low SES students as well as several subgroups of low SES. See Table 1 above for the calculated z-value for overall special education representation. For students of low SES, the z-tests were significant at the .05 level for all the categories except autism. For part two of the Missouri criteria, the difference between the proportions was at least 10% in all categories, except autism. For part 3 of the Missouri test, all the categories had at last 10 students. Since students of low SES were overrepresented in at least four categories, students of low SES were overrepresented overall using the Missouri criteria.

Several subgroups of low SES students were also examined using the Missouri three-part test. The groups included African Americans of low SES, non-African Americans of low SES, males of low SES, and females of low SES. African Americans of low SES and males of low SES were discussed in previous subsections and were found to be overrepresented in special education according to the Missouri criteria.

Non-African Americans of low SES. For non-African Americans of low SES, the z-tests were significant at the .05 level for all the categories except autism. For part two of the Missouri criteria, the difference between the proportions was at least 10% in all categories. For part 3 of the Missouri criteria, all the categories had at last 10 students. Since non-African Americans of low SES were overrepresented in at least four categories, non-African Americans of low SES were overrepresented overall using the Missouri criteria.

Females of low SES. For females of low SES, the z-tests were significant at the .05 level for five out of eight categories including, special education overall, mental retardation, emotional disturbance, learning disability, and placement in special education at least 60% of the week. For part two of the Missouri criteria, the difference between the proportions was at least 10% in the same five categories. For part 3 of the Missouri test, all the categories except autism had at last 10 students. Since females of low SES were overrepresented in at least four categories, females of low SES were overrepresented overall using the Missouri criteria.

Results of Hypothesis Three were more definitive than Hypothesis Two. Like Hypotheses One and Two, low SES students were overrepresented in special education when examined independently. When looked at with subgroups of race and gender, low SES students were still overrepresented. In no case were non-low SES subgroups overrepresented in special education. Hypothesis Three is supported. Low SES students are overrepresented in special education in the district under study regardless of race and gender. The effects of poverty on academics have been well documented (Ingersoll, 2003; National Research Council, 2002; Skiba et al., 2005) and risk for disability appears to be no exception for this district. Race and gender vary the level of overrepresentation some as exhibited by risk ratios (see the next sub-section), but not enough to mitigate the effects of poverty.

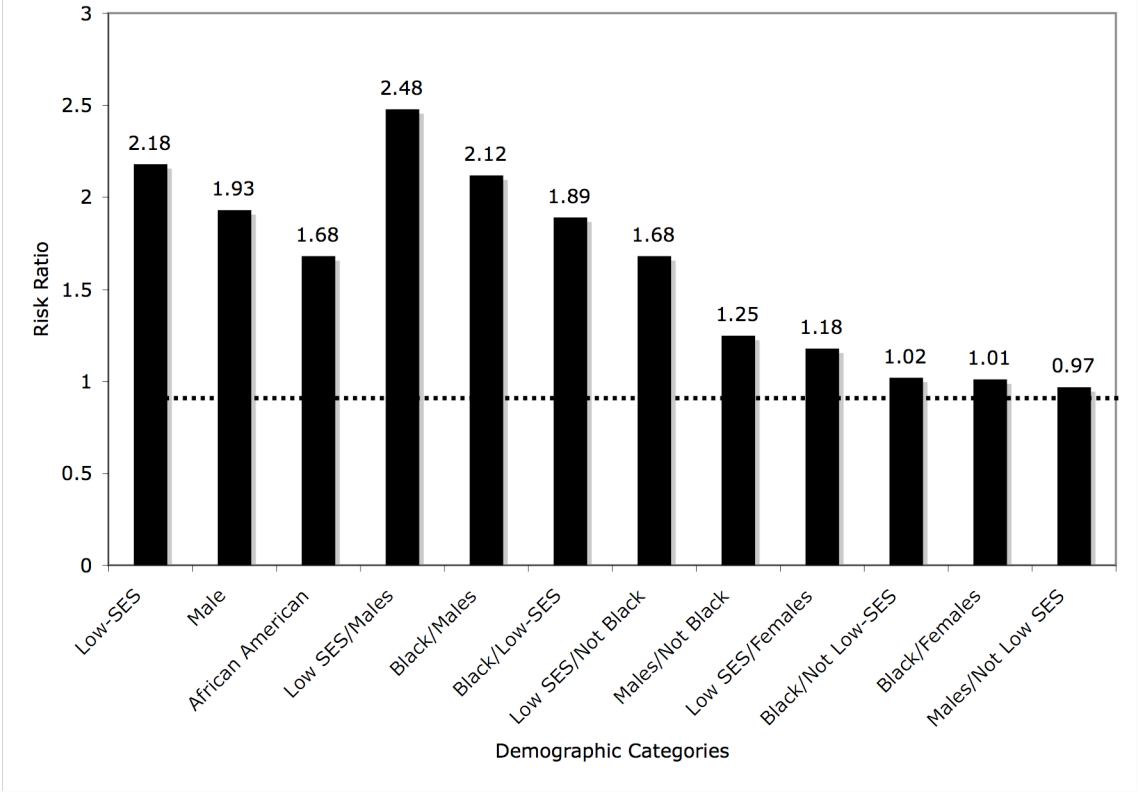
Risk Ratios

Risk ratios (Bollmer et al., 2007) for race, SES, and gender and the demographic subcategories were also calculated. Risk ratio was not intended to be a test for significance, but only to show the likelihood of one subgroup being placed into special

education compared to everyone else not in that subgroup. It is presented here to illustrate the level of representation among demographic subgroups. The risk ratio divides the percent risk of a subgroup by the percent risk for a comparison group. A risk ratio of 1.0 indicates that the subgroup is no more likely to be in special education than the comparison group. Risk ratios greater than 1.0 indicate that the subgroup is more likely than the comparison group to be in special education. Risk ratios less than 1.0 indicate that the subgroup is less likely than the comparison group to be in special education. For example, 17.0% of African Americans and 10.1% of non-African Americans were identified as being in special education in the school district under study. The resulting risk ratio for African Americans compared to non-African Americans was 1.68. This risk ratio indicates that African Americans were 1.68 times as likely as non-African Americans to be receiving special education services. See Appendix A for the numbers of students in each demographic subcategory and the resulting risk ratios.

See Figure 3 for a graph of the likelihood of each demographic category to be identified as needing special education as compared to the other students not in the demographic category.

Figure 3. Likelihood of Special Education Identification



Research Question Two

Research Question Two stated, how does students' likelihood for disability identification differ by race/ethnicity, gender, and socioeconomic status and the type of disability? This question had two corresponding hypotheses.

Hypothesis Four

Hypothesis Four stated, there is a difference among various types of disability in the pattern of overrepresentation in special education by race, SES, and gender for the district under study. Analysis for this hypothesis was completed using the three-part Missouri test described in Chapter 3. If all three parts are true (z-test, P+10%, N ≥10), then the demographic subgroup is considered overrepresented in the individual disability

category. The analysis for Hypothesis Four was imbedded in Research Question One. See Table 2 below for a complete list of the demographic subgroups and a summary of what disability categories they were overrepresented in.

Table 2

Overrepresentation of Demographic Groups Using Missouri Three-Part Test

Demographic Category	MR	ED	LD	S/L	OHI	Autism
Black	Yes	Yes	Yes	Yes	Yes	No
Males	No	Yes	Yes	Yes	Yes	Yes
Low SES	Yes	Yes	Yes	Yes	Yes	No
Black, Low SES	Yes	Yes	Yes	Yes	Yes	No
Black, not Low SES	No	No	No	No	No	No
Black, Males	Yes	Yes	Yes	Yes	Yes	No
Black, Females	Yes	No	No	No	No	No
Low SES, Males	Yes	Yes	Yes	Yes	Yes	Yes
Low SES Females	Yes	Yes	Yes	No	No	No
Non-Low SES Males	No	No	No	No	No	Yes
Low SES, Non-Black	Yes	Yes	Yes	Yes	Yes	No
Non-Black, Male	No	No	No	Yes	Yes	Yes

MR=Mental Retardation, ED=Emotional Disturbance, LD=Learning Disability, S/L=Speech or Language Impairment, OHI=Other Health Impairment

Major demographic categories. As stated previously, all three major demographic categories (Race, SES, and gender) were overrepresented in special education overall according to Missouri criteria when analyzed individually. African Americans and low SES students were overrepresented in five of six disability categories, mental retardation, emotional disturbance, learning disability, speech or language impairment, and other health impairment. They were not overrepresented in autism. Males were overrepresented in five of six disability categories, including emotional disturbance, learning disability, speech or language impairment, other health impairment, and autism. They were not overrepresented in mental retardation.

Risk ratios (Bollmer et al., 2007) were also calculated and are presented here to show the level of representation among the subgroups. They are reported here if they were 2.5 or higher, indicating that these subgroups were at least 2.5 times as likely to be diagnosed with a particular disability as students not in the subgroup. See Table 3 below for a complete list of risk ratios by racial subgroup and disability category.

Table 3

Risk Ratios of Demographic Groups by Disability

Demographic Category	MR	ED	LD	S/L	OHI	Autism
Black	2.59	2.95	1.87	1.49	1.88	0.45
Males	1.24	2.64	1.44	1.61	2.59	15.17
Low SES	8.42	5.71	2.58	1.56	2.71	0.87
Black, Low SES	3.28	3.81	2.24	1.57	2.15	0.42
Black, not Low SES	0.77	0.71	0.86	1.13	1.01	0.62
Black, Males	2.09	3.55	2.30	1.76	2.63	0.94
Black, Females	2.22	1.37	1.11	1.05	0.88	0.05
Low SES, Males	3.75	5.20	2.51	1.78	3.43	2.02
Low SES Females	3.23	1.56	1.51	1.06	1.02	0.03
Non-Low SES Females	0.35	0.63	0.79	0.52	0.25	0.11
Non-Low SES Males	0.11	0.07	0.39	1.10	0.91	3.53
Low SES, Non-Black	3.71	2.35	1.76	1.26	1.94	1.42
Non-Low SES, Non-Black	0.11	0.18	0.41	0.64	0.37	1.27
Non-Black, Female	0.46	0.22	0.63	0.56	0.34	0.09
Non-Black, Male	0.82	1.08	0.89	1.20	1.37	7.41

MR=Mental Retardation, ED=Emotional Disturbance, LD=Learning Disability, S/L=Speech or Language Impairment, OHI=Other Health Impairment

Risk ratios are presented here to show the likelihood of a demographic subgroup being identified with a particular disability, not to establish whether the subgroup was overrepresented in the disability category. African Americans were 2.59 and 2.95 times

as likely as other races to be diagnosed with mental retardation and emotional disturbance, respectively. Low SES students had risk ratios of 8.42 in mental retardation, 5.71 in emotional disturbance, 2.58 in learning disability, and 2.71 in other health impaired. Males had a risk ratio of 2.64 in emotional disturbance, 2.59 in other health impairment, and 15.17 in autism.

Demographic pairs. The major demographic groups were paired off to make subgroups such as African American males and low SES females. See Table 3 above for a complete list of pairings. Below, each of the pairings will be addressed in two ways. The first will be whether the demographic subgroup was overrepresented in individual disability categories according to the Missouri three-part test. The second will be the risk ratios associated with the disability categories. The risk ratios do not determine if the demographic category is overrepresented, but show the level of representation compared to other students not in that demographic subgroup. Risk ratios are presented if they are higher than 2.5. For a complete list of risk ratios by disability, see Table 3 above.

As stated previously, African Americans of low SES were overrepresented in every disability category, except autism according to the Missouri three-part test. They had risk ratios higher than 2.5 in the disabilities of mental retardation (3.28) and emotional disturbance (3.81). African Americans not of low SES were not overrepresented in any disability according to Missouri criteria. The population of African American males was also overrepresented in every disability except autism according to Missouri criteria. They had risk ratios higher than 2.5 in the categories of emotional disturbance (3.55) and other health impairment (2.63). African American

females were only overrepresented in mental retardation. None of the risk ratios for African American females were higher than 2.5.

Low SES males were overrepresented in every disability according to Missouri criteria. They had risk ratios over 2.5 in mental retardation (3.75), emotional disturbance (5.20), learning disability (2.51), and other health impairment (3.43). Low SES females were only overrepresented in mental retardation, emotional disturbance, and learning disability. Low SES females had a risk ratio of 3.23 in mental retardation. Non-low SES males were overrepresented only in autism with a risk ratio of 3.53.

Non-African Americans of low SES were overrepresented in every disability except autism. Only mental retardation, however, had a risk ratio over 2.5. This group of students was 3.71 times as likely as other students to be diagnosed with mental retardation. Non-African American males were overrepresented in three disabilities, speech or language impairment, other health impairment, and autism. Only autism had a risk ratio higher than 2.5. Non-African American males had a risk ratio of 7.41 in autism. Finally, non-low SES males were only overrepresented in autism and had a risk ratio of 3.53.

Results for Hypothesis Four vary widely depending on demographic category and disability. Low SES students tended to be overrepresented in most of the six disability categories. Autism was the only exception. Hypothesis Four is supported. African Americans tended to be overrepresented in most of the disability categories until examined in conjunction with gender and SES. Results for individual disability categories tended to mimic results for special education overall. African Americans were overrepresented if they were also male or low SES, but not if they were female or not low

SES. The only exception appears to be with African American females who were overrepresented in mental retardation, which may require further examination. Results for males tended to be more mixed. When examined in demographic pairs with race and SES, males tended to be overrepresented in most disability categories unless they were not low SES. Like the result for Hypothesis Two, SES may have influenced the results of race. Gender had a notable influence with the diagnosis of autism. With the exception of African American males, subgroups of males were highly overrepresented in autism. In no analysis were females overrepresented in autism suggesting a potential gender link to autism in this district.

Hypothesis Five

Hypothesis Five stated, among students with a disability, emotional disturbance is more likely to be diagnosed with African American students, low SES students, and male students for the district under study. A stepwise binary logistic regression was conducted with the independent variables of race, SES, and gender. The dependent variable was identification as a student with an emotional disturbance (emotional disturbance =1, other disability=0). Only students receiving special education services were included in the analysis.

There were 2,725 students included in the analysis, which consisted of all the students identified as having a disability. Of those, 214 students were identified as having an emotional disturbance. See Table 4 for the demographic breakdown of emotional disturbance.

Table 4

Demographic Breakdown of Emotional Disturbance Diagnoses

	Emotional Disturbance-Yes	Emotional Disturbance-No
African Americans	99	798
Non-African American	115	1713
Low SES	156	1225
Non-Low SES	58	1286
Male	158	1679
Female	56	832

Each independent variable was stepped in manually with race being the first step, followed by SES, and then gender. These variables were coded (African American=1, non-African American=0; free and reduced lunch=1, not free or reduced lunch=0; male=1, female=0). Step one introduced race into the model. Race was not significantly associated with identification as a student with an emotional disturbance once all the independent variables were stepped in (Wald=3.0, p=.08). Correspondingly, race contributed a small amount in explaining the probability of diagnosing an emotional disturbance with a Cox and Snell R^2 of .007. African Americans students' probability of being identified with an emotional disturbance was 6.6% (Exp(B)=1.306) higher than other students controlling for SES and gender. See Table 5 for the regression statistics by step.

Table 5

Hypothesis Five: Predicting Emotional Disturbance

Step	B	Wald Statistic	p-value	Cox and Snell R^2	Exp(B)
Race (Black=1, Other=0)	.267	3.0	.08	.007	1.306
SES (Low SES=1, not Low SES=0)	.962	32.0	$1.5x10^{-8}$	.018	2.618
Gender (Male=1, Female=0)	.402	6.1	.01	.021	1.496
Constant	-3.44	342.3	$2.0x10^{-76}$	--	.032

Note: n=2725

In step two, SES was significantly associated with identification with an emotional disturbance (Wald=32.0, $p=1.5x10^{-8}$). SES added .011 in explaining the probability of diagnosing an emotional disturbance with a Cox and Snell R^2 of .018 at step two. Low SES students' probability of being identified with an emotional disturbance was 22.4% (Exp(B)=2.618) higher than other students controlling for race and gender. In step three, gender was significantly associated with identification with an emotional disturbance (Wald=6.1, p=.01). Gender added another .003 in explaining the probability of diagnosing an emotional disturbance with Cox and Snell R^2 of .021. Male students' probability of being identified with an emotional disturbance was 9.9% (Exp(B)=1.496) higher than that of other students controlling for race and SES.

Results of Hypothesis Five are partially consistent with the analysis of emotional disturbance in Hypothesis Four. Race was not a significant predictor of emotional disturbance when controlling for gender and SES again suggesting that the level of overrepresentation among African Americans was influenced by SES. Most of the

variance in the model was explained by SES. Despite not being a significant predictor, race explains more variance in the model than does gender. Poverty comes out as the primary predictive factor for identification with an emotional disturbance. Hypothesis Five is partially supported. While SES and gender are the only significant predictors of an emotional disturbance, African Americans, low SES students, and males are all more likely than non-African Americans, non-low SES students, and females, respectively, to be diagnosed with an emotional disturbance when controlling for each demographic variable. The amount of variance accounted for in the model, however, is so small that these variables alone cannot accurately predict identification with an emotional disturbance. The next section will report the results for Research Question Three.

Research Question Three

Research Question Three stated, is professional judgment used more often with African American, male, or low SES students when diagnosing a disability?

Hypothesis Six

Hypothesis Six stated, professional judgment is more likely to be used with African American students, low SES students, and male students when identifying a learning disability for the district under study. This research question examined only students who were identified as having a disability within the two school years, specifically those who were identified with a learning disability. A stepwise binary logistic regression was conducted to address this hypothesis. The independent variables were race, SES, and gender. The dependent variable was whether professional judgment was used in the diagnosis.

The analysis included 156 students, where 33 were identified as having a learning

disability using professional judgment. See Table 6 for the demographic disaggregated data.

Table 6

Demographic Breakdown within Professional Judgment for Learning Disability

	Professional Judgment Used	**Professional Judgment Not Used**
African Americans	14	51
Non-African American	19	72
Low SES	19	78
Non-Low SES	14	45
Male	14	81
Female	19	42

The regression statistics can be seen in Table 7.

Table 7

Hypotheses Six: Predicting Use of Professional Judgment with Learning Disabilities

Step	B	Wald Statistic	p-value	Cox and Snell R^2	Exp(B)
Race (Black=1, Other=0)	.267	.354	.552	$6.3x10^{-5}$	1.306
SES (Low SES=1, not Low SES=0)	-.395	.770	.380	.003	.674
Gender (Male=1, Female=0)	-.994	6.067	.014	.042	.370
Constant	-.648	22.1	$2.6x10^{-6}$	--	.523

Note: n=156

The independent variables were manually stepped in to the logistic regression model starting with race, followed by SES, and finally gender. Each independent variable was coded as a 1 or 0. For race, African Americans were coded as a 1 and all other races as a 0. For SES, students on free or reduced lunch were coded as a 1 and students not on free and reduced lunch were coded as a 0. For gender, males were coded as a 1 and females were coded as a 0. Step one of the logistic regression introduced race. Once all the variables were stepped into the model, race was not significantly associated with the use of professional judgment (Wald=.354, p=.552). Correspondingly, race contributed a small amount in explaining the probability of using professional judgment with a Cox and Snell R^2 of $6.3x10^{-5}$. African Americans students' probability of being identified with a learning disability using professional judgment was 6.6% (Exp(B)=.766) higher than that of other students controlling for SES and gender. Step two introduced SES. SES was also not significantly associated with the use of professional judgment (Wald=.770, p=1.306). It also contributed a small amount in explaining the probability of using professional judgment with a Cox and Snell R^2 of .0029 for a total R^2 of .003 at step two. Low SES students' probability of being identified with a learning disability using professional judgment was 9.7% (Exp(B)=.674) lower than that of other students controlling for race and gender. Gender was introduced in step 3. Gender was the only independent variable that was significantly associated with the use of professional judgment in diagnosing a learning disability (Wald=6.067, p=.014). Gender added the most in explaining the probability of using professional judgment with a Cox and Snell R^2 of .039 for a model R^2 of .042 when all three independent variables are included. Male students' probability of being identified with a learning disability using professional

judgment was 23.0% (Exp(B)=.370) lower than females controlling for SES and race.

Results of Hypothesis Six are mixed. Gender was the only significant predictor of the use of professional judgment when identifying a learning disability. Hypothesis Six is partially supported. Despite males being overrepresented in the learning disability category, it was more likely that professional judgment was used with females. The same held true with low SES students versus non-low SES students. Non-low SES students were more likely to be identified with a learning disability when using professional judgment. The reasons for this outcome are unclear, but it could be that males and low SES students more readily met the learning disability criteria, thus negating the need for professional judgment. African Americans were more likely than non-African Americans to be identified using professional judgment; however, the variable was not a significant predictor and contributed only a small amount of the overall variance. Despite gender being a significant predictor, all three variables explained only a small amount of the overall variance (4.2%), indicating that the demographic variables were not useful in predicting the use of professional judgment.

Summary of Results Chapter

This chapter presented the results of the data analyses, as they pertained to the research questions and hypotheses. Research Question One examined the overrepresentation in special education among race, SES, and gender, including pairing of the demographic variables. Results showed overrepresentation in all the demographic variables individually and in all the pairings involving low SES students and males, except males who were not low SES. African Americans were only overrepresented when they were also male or low SES. Research Question Two examined

overrepresentation of demographic groups within six disability categories. African Americans tended to be overrepresented in most disability categories if they were also male or low SES. Low SES students tended to be overrepresented in most of the disabilities, except autism. Males tended to be overrepresented in most disability categories, except males who were not low SES. In addition, emotional disturbance was also analyzed using logistic regression with race, SES, and gender being the independent variables. Only SES and gender were significant predictors of identification with an emotional disturbance. All three demographic categories, however, were more likely than their opposite categories (non-African Americans, non-low SES, and female) to be identified with an emotional disturbance. Research Question Three examined the same demographic variables and how they affect the practice of professional judgment as it pertains to identifying a student with a learning disability. Results showed that only gender was a significant predictor of using professional judgment to identify students with a learning disability. African Americans were more likely than non-African Americans to be identified with a learning disability using professional judgment. Males and low SES students were not more likely than females and non-low SES students, respectively, to be identified using professional judgment. The next chapter will discuss these results in the context of the overall study and how the results answer the research questions and hypotheses.

Chapter 5: Discussion

This chapter will consist of four major sections. The first section will address the results from chapter four and how they relate to the research questions and hypotheses. This discussion will answer the research questions relevant to the data presented in chapter four. The second major section will examine the relationship of the results of this study to previous research and theory. The third section will examine the implications of this study on future practice and research. The fourth section will examine methodological implications.

Discussion of Results

This section will discuss the results of the study as they pertain to the research questions and hypotheses. The research questions and corresponding hypotheses will be discussed and answered.

Research Question One

The first research question examined how the likelihood of identification as a student with a disability differs by race, gender, and SES. Analysis of the school district population using Missouri criteria for determining overrepresentation indicated that when looked at independently, African Americans, students of low SES, and males were all more likely to be identified as students with disabilities than non-African American, non-low SES, and females, respectively. When the different racial demographics were paired, however, certain subgroups within these demographics were not overrepresented in special education. The most noteworthy finding is that while African American students were overrepresented overall, they were not overrepresented when they were female or

not low SES. When looking at risk ratios for African American females and African Americans not of low SES, these subgroups were no more likely than all other students to be identified with a disability. Hypothesis One stated that African Americans are overrepresented regardless of SES and gender. Based on these results, Hypothesis One is not supported. The issue of overrepresentation in special education for African Americans was only a problem when they were also male or low SES. Female and non-low SES African Americans were not overrepresented in special education in the district under study.

Males were overrepresented in special education when looked at without race and SES. When paired with race and SES, however, the degree of overrepresentation was different from African Americans. Most demographic pairings that included males (African American, non-African Americans, and low SES) resulted in overrepresentation of that subgroup according to Missouri criteria. The only pairing that did not result in overrepresentation was males who were not low SES. Hypothesis Two stated that males are overrepresented in special education regardless of SES and race. Hypothesis Two is partially supported. Males were overrepresented regardless of race, but they were not overrepresented regardless of SES. Non-low SES males were not overrepresented in special education in the school district under study.

When examining SES, the findings were more conclusive than for gender. Males, females, African Americans, and non-African Americans were all overrepresented in special education when they were also low SES. Non-low SES students were never overrepresented. Hypothesis Three stated that low SES students were overrepresented regardless of race and gender. Based on these finding, Hypothesis Three is supported.

Low SES students were overrepresented regardless of race and gender.

Research Question Two

Research Question Two examined the likelihood of being identified with a particular disability based on race, gender, and SES. There are two corresponding hypotheses. Hypothesis Four stated that there is a difference among various types of disability in the pattern of overrepresentation in special education by race, SES, and gender for the district under study. Hypothesis Five looked at emotional disturbance in more detail, using a regression analysis.

For Hypothesis Four results varied when the disability categories were examined independently. When looking at the demographic variables independently, African Americans, low SES students, and males were all overrepresented in emotional disturbance, learning disability, speech or language impairment, and other health impairment. In addition, African Americans and students of low SES were overrepresented in mental retardation and males were overrepresented in autism. Next, each of the six disability categories will be examined with the demographic pairings.

Mental retardation. Since mental retardation has been the subject of prior court cases (Jacob-Timm & Hartshorne, 1998) involving overrepresentation, it is a category of particular importance. African Americans were overrepresented in mental retardation in almost every demographic pairing. Both males and females and low SES students who were African American were all overrepresented in mental retardation, with each group being at least twice as likely as other students to be diagnosed with it. Only African Americans who were not low SES were not overrepresented. African Americans not of low SES were somewhat underrepresented in this disability category (risk ratio=.77).

Low SES students were overrepresented regardless of the racial and gender pairings. Low SES students in every pairing were at least three times as likely to be diagnosed with mental retardation as other students. The results from males were quite different. Males were overrepresented in mental retardation if they were African American or low SES. Males who were not African American or not low SES, however, were not overrepresented. In fact, non-low SES males were almost $1/10^{th}$ as likely as other students to be overrepresented. With mental retardation, SES and race appeared to be the major predictive factors, but even race was only inconsistently a predictive factor depending on SES. Low SES was by far the biggest predictive factor for students being diagnosed with mental retardation.

Emotional disturbance. The findings for emotional disturbance were only slightly different from mental retardation. Again, low SES appeared to be the major predictive factor. In every pairing where low SES was involved students were overrepresented in emotional disturbance. Low SES students were always identified with emotional disturbance at a rate of at least three times other students. African Americans and males were only overrepresented when they were also low SES. See Hypothesis Five below for additional analysis on emotional disturbance.

Learning disability. Learning disabilities were the largest category of disability in special education in the district under study. African Americans were overrepresented in learning disabilities if they were male and regardless of SES. Female African American students were not overrepresented in learning disabilities. As with mental retardation and emotional disturbance, low SES appeared to be the primary predictive factor. Low SES students were overrepresented in learning disabilities regardless of gender and race.

Males were also at significant risk of overrepresentation with learning disabilities. The only pairing where males were not overrepresented was non-African American males.

Speech or language impairment. As with learning disabilities, African Americans were only overrepresented with speech or language impairments if they were also male or low SES. Low SES was again the biggest predictive factor, but not as much as with mental retardation, emotional disturbance, and learning disability. Low SES students were overrepresented in speech or language impairment in almost every demographic pairing, with the exception of low SES females. Males were overrepresented in speech or language impairment regardless of race, but not regardless of SES. Non-low SES males were not overrepresented with speech or language impairments.

Other health impairment. The breakdown of demographic pairings with other health impairment were the exact same as speech or language impairment. Low SES was the biggest predictive factor, with only low SES females not being overrepresented. African Americans were only overrepresented when they were also low SES or males. Males were overrepresented regardless of race, but not regardless of SES. Non-low SES males were not overrepresented in other health impairment.

Autism. Autism did not appear to fit in with the other disability categories in how the demographic pairings parceled out. African Americans were not overrepresented in autism regardless of SES and gender. The only group of low SES students that were overrepresented in autism was low SES males. Low SES, non-low SES, and non-African American males were all overrepresented in autism. The biggest predictive factor with autism appeared to be gender. Males were overrepresented in autism regardless of SES, but not regardless of race.

The results by disability varied widely depending on the disability category. By far, low SES was the biggest predictive factor with every disability category except autism. African Americans appeared to only be at risk in individual disability categories when they also had other predictive factors like when they were male or low SES. The only exception was mental retardation where African American females were overrepresented. The reasoning behind this exception is unclear, especially considering being female tended not to be a predictive factor for any disability category. It is possible that low SES was affecting African Americans in the mental retardation category more so than other categories. Examining demographic triads within mental retardation could test this theory. For example the Missouri test could be performed within mental retardation on female African Americans not of low SES and female African Americans of low SES. Analysis of these triads could further define the affects of SES in this category.

With the diagnosis of autism, the big predictive factor was being male. Males overall were 15 times as likely as females to be diagnosed with autism. The area of autism warrants further investigation. No demographic group or pairing had such a large risk ratio, indicating a strong relationship between autism and males. Hypothesis Four is supported. There was a difference among various types of disability in the pattern of overrepresentation in special education by race, SES, and gender for the district under study.

Hypothesis five. Hypothesis Five looked at emotional disturbance and stated among students with a disability, emotional disturbance is more likely to be diagnosed with African American students, low SES students, and male students for the district under study. The criteria for identifying an emotional disturbance is poorly defined

(Costenbader & Buntaine, 1999) and it was the category with the highest level of overrepresentation among African Americans in the district under study. In the regression model, SES and gender were both significantly associated with identification with an emotional disturbance. Race was not significantly associated with identification of an emotional disturbance. These results were consistent with results for emotional disturbance in Hypothesis Four. SES was the biggest predictive factor followed by gender. Even though SES and gender were significantly associated with emotional disturbance in the model, the amount of overall explained variance was still less than 3%, most of which was contributed by SES. Race, SES, and gender explained too little of the variance to be good variables for predicting an emotional disturbance. Hypothesis Five is partially supported. Emotional disturbance was more likely to be diagnosed with African American students than non-African American students when controlling for SES and gender for the district under study. Low SES students were more likely than non-low SES students to be identified with an emotional disturbance when controlling for race and gender. Males were more likely than females to be identified with an emotional disturbance when controlling for race, and SES. Despite these findings, only SES and gender were significant predictors.

Research Question Three

Research Question Three examined the influence of professional judgment on subgroup overrepresentation. Hypothesis Six stated that professional judgment is more likely to be used with African American students, low SES students, and male students when identifying a learning disability for the district under study. In the resulting

regression model, only gender was significantly associated with the use of professional judgment. It is important to note; however, that the overall explained variance was less than 5%, indicating that most of the variance was unaccounted for. The gender variable contributed most of that 5%. This low amount of explained variance suggests that race, SES, and gender were not the best variables for explaining the use of professional judgment in identifying learning disabilities. Hypothesis Six is partially supported. Professional judgment was more likely to be used with African American students than non-African American students, but not with low SES students compared to non-low SES students, and males compared to females in the district under study. Despite African Americans being more likely than non-African Americans to be identified with professional judgment, race was not a significant predictor in the model. Only gender was a significant predictor in the use of professional judgment and males were less likely than females to be diagnosed with a learning disability using professional judgment. The next section will examine how the results of this study relate to previous research and theory.

Relationship to Previous Research and Theory

This section will examine the findings of this study and how it relates to previous research and theory. It will examine each of the three demographic variables, race, SES, and gender. It will then look at how professionalism is related to the findings.

Race and SES

MacMillan and Rechsley (1998) stated that greater specificity is needed in the discussion of minority disproportionality in special education.

> Ethnicity and poverty are inextricably interwoven in our society and the [Office of Civil Rights] data (and other data sets used to inform us on overrepresentation) fail to break out cases of [Mild Mental Retardation],

> [Specific Learning Disability], and [Serious Emotional Disturbance] by ethnicity *and* social class. We are willing to wager that in such a matrix, the inter-correlation between ethnicity and social class would be moderately high and that social class, and not ethnicity, would explain more variance in the rates of detection for these high incidence disabilities (MacMillan & Reschly, 1998, pp. 19-20).

This study has attempted to provide that specificity within a single school district. The clearest finding of this study is that African Americans are never overrepresented in special education or any subcategory when they are not also low SES within the school district under study. This finding confirms the hypothesis of MacMilllan and Rechsly for the school district under study. It is, however, important to note that African Americans are still overrepresented in special education. In analyzing the results, one must be careful not to use the influence of SES as an excuse not to address the issue of overrepresentation among African Americans. Just because the primary predictive factor revealed in this study was low SES, it does not mean that race was not an important factor. Of the three demographic variables, low SES was the highest predictive factor regardless of gender and race. Male students were overrepresented regardless of race, but not regardless of SES. With one exception, mental retardation, race appears to be only a small predictive factor in identification of a disability in special education. Even with mental retardation, however, race is not a factor when the students are not low SES. Skiba states, "the consistent overlap of race and poverty in this country has led some to suggest that race is simply a 'proxy' for poverty" (2005, p. 131). As far as identification as a student with a disability is concerned, this statement appears to be true for this district. If SES is not accounted for, African Americans look overrepresented in almost every situation. When SES is accounted for, however, only African Americans of low SES are overrepresented.

Blanchett (2006) discussed the idea of white privilege and its role in the overidentification of African Americans in special education. By her definition of white privilege, she is indirectly correct. She stated,

> "White Privilege" as it exists in American society or in the American educational system is defined as any phenomena, whether individual (e.g., biased teacher attitudes/perceptions), structural (e.g., curricular and pedagogical practices geared toward White, middle-class students), political (e.g., biased educational policies), economic (social constructions of race and disability), that serve to privilege Whites while oppressing people of color (Blanchett, 2006, p. 24).

The economic situation in the United States surrounding the African American community may be contributing to an overrepresentation of African Americans in special education in this district. The issue of overrepresentation for this district appears to be an economic issue and not directly a racial issue. Since African Americans tend to be overrepresented in low SES in this district, they are overrepresented in special education. The data for this district, however, does not support the idea that the social constructs surrounding disability specifically disadvantage all African Americans because African Americans are not overrepresented when they are not low SES.

These results confirm many previous studies that have discussed the negative effects of poverty (Ingersoll, 2003; National Research Council, 2002; Skiba et al., 2005). Low SES students are of significantly greater risk for identification as a student with a disability in this district. With a few exceptions, low SES students are overrepresented in almost every category. The only low SES subgroup where results were mixed was with females. These findings appear to contradict the results from Skiba. Skiba and coauthors (2005) suggested that poverty is not a central variable in predicting African American overrepresentation. Poverty does have a central role in predicting African American

overrepresentation within this district. The reason this study contradicts Skiba is likely due to the very limitation Skiba suggested regarding their own results. Skiba's study relied on aggregated district level data that could not fully account for the interactions of race and SES; whereas, this study examined individual student data.

The fact remains that poverty and race are intertwined. O'Connor and Fernandez (2006) put forth the theory of compromised human development. They had four main premises. One, racial minorities are more likely to be of low SES compared to Caucasians. Two, poverty negatively affects early cognitive development. Three, readiness for school is negatively affected by delays in cognitive development. Four, delays in academic readiness followed by delays in academic achievement increase the likelihood that a student will qualify for special education. The theory of compromised human development appears to be an accurate theory for this district based on the results of this study. Because of the clear interaction between race and poverty, federal policy surrounding racial overrepresentation is still important to consider and should not be dismissed. The fact remains that African Americans are overrepresented in special education and there is considerable political precedent for continuing to address the issue.

Gender

While the interaction between race and SES is strong, the affect of gender was mixed. Overall, this study confirmed prior studies that found that males are overrepresented in special education (Coutinho & Oswald, 2005; Coutinho et al., 2002; Wehmeyer & Schwartz, 2001). Males outnumber females more than two to one in the district under study. They outnumber females by more than three to one in the category of emotional disturbance, which is consistent with national studies (Coutinho et al., 2002;

National Research Council, 2002). Males are overrepresented regardless of race, but not regardless of SES. The clearest finding within gender is that males and females are only overrepresented when they are also low SES, indicating that SES is still the more important predictive factor. The most interesting finding regarding gender is its influence on autism. In no demographic pairing are females overrepresented in autism. Males are 15 times as likely females to be diagnosed with autism in the district under study. The only demographic pairing where males are not overrepresented in autism is African American males. Some additional research may need to be conducted regarding differential diagnosis of emotional disturbance and autism among African American males. Students with an emotional disturbance or autism, by definition, tend to exhibit behavioral and social problems. One important investigation for the district under study is if African American males are being misidentified with an emotional disturbance when they actually have autism.

Coutinho and Oswald state, "The concern about gender disproportionality in special education…is often about under- rather than overrepresentation" (2005, p. 7). They also state that gender disproportionality may be a result of gender bias in diagnosis. The implication here is that gender bias in special education is that females tend to be under-diagnosed. Research Question Three examined the use of professional judgment, specifically looking at its use in the identification of learning disabilities. Learning disabilities are identified using specific criteria. In Missouri, there must be a 22-point discrepancy between cognitive ability (IQ) and achievement with achievement being lower. Analysis for Research Question Three showed that professional judgment was proportionally used more frequently for females than for males in the district under study.

In other words, proportionally more females than males did not meet the strict criteria for identifying a learning disability, but were identified with a learning disability anyway. These findings suggest that if bias exists regarding gender, it exists in two possible places. One, it may exist at the point of referral, suggesting that females who would legitimately qualify are never referred for special education in the first place and are; therefore, never being tested. Two, bias may exist against females in that they are identified as learning disabled in the district under study despite not meeting the criteria. Bias at the point of referral would be consistent with Coutinho and Oswald, but is difficult to prove without testing every female in the school district. Bias against females by qualifying them despite not meeting the criteria is not consistent with Coutinho and Oswald's suggestion that females are being under identified.

Professionalism

Another important premise to address is the concept of professionalism. As stated in chapter two, the assumption behind overrepresentation is that there should be no overrepresentation if bias does not exist. The findings for the fifth and sixth hypotheses indicate that race, SES, and gender contributed little to the overall models, less than 5% in both cases and only gender was a significant predictor in both regression models. If there is bias on the part of the professionals, it does not appear to be contributing much to the identification of learning disabilities and emotional disturbance in this school district. Jacob-Timm and Hartshorne (1998) defined three types of bias that the professional must control for. The first two, choosing tests which are statistically validated as unbiased and using the tests appropriately are relatively easy to account for. The third type of bias is more difficult. Jacob-Timm and Hartshorne stated that if the outcome of the assessment

leads to overrepresentation of a subgroup, then the whole process is bias. By that definition, bias exists in the school district for African Americans, males, and low SES students regardless of how much variance is accounted for by those variables, suggesting that Jacob-Timm and Hartshorne third type of bias may need to be modified. It may be more accurate to state that bias exists if it can be shown that demographic variables contribute notably to the variance when identifying a disability. By that definition, no bias exists in this district when identifying an emotional disturbance since the explained variance was barely 2%. A logistic regression analysis for other disability categories and special education as a whole could determine the amount of explained variance for the district under study. The next section will examine the implications for future research and practice.

Implications for Future Practice and Research

One of the primary advantages of examining a single school district is that the school district being studied may utilize the results to inform its practices. Despite the clear influence of low SES, interventions should still be focused around African Americans in this school district. Policy makers should be careful not to dismiss the issue of racial overrepresentation, but to use the data to focus efforts on the specific subgroups with the highest levels of overrepresentation. For example, since the data so clearly show that racial overrepresentation is more a function of SES, any interventions to alleviate racial overrepresentation should be focused toward African American males and African Americans of low SES. In addition, the incident rates of low SES and male students within special education may indicate a need for increased interventions among these two groups, especially low SES males. Pre-referral interventions or special programs for at-

risk students may alleviate special education overrepresentation in these subgroups; however, if these students genuinely have a disability, then additional programs may not always be warranted. The implication here is that the school district may need to conduct a more in depth file review where males and low SES students are concerned, especially if those students are also African American. The file review should consist of verification that the students really qualified for the disability they were labeled with. A review of this kind, especially focusing on the disabilities with the highest levels of overrepresentation could reveal any weaknesses or inconsistencies in diagnostic practices.

Overrepresentation among males should not be overlooked just because it is not addressed by public policy. Low SES males, especially low SES, African American males need to have specific targeted interventions to help alleviate problems with behavior and academic achievement. Initiatives such as Positive Behavior Support and Response to Intervention could be helpful in these efforts. In addition, a closer examination of disabilities in females is important. Either males are overrepresented for currently unclear reasons or females are underrepresented and manifest disabilities in ways school professionals are not accustomed to. A closer examination of autism among males is also indicated. The autism rate among males far exceeds any other demographic category in any other disability category. The etiology of autism is not yet known, but it could be that boys are more susceptible to the disorder. Stoller (2006) suggests that testosterone enhances the effects of mercury pollutants that are causing autism. Until such links are proven, however, the school district must operate under the assumption that males should not be over-identified to such a degree, certainly no more than they are already overrepresented with other disabilities. Some possible questions arise from this

quandary. Do females exhibit autism in a way that is not as easily identifiable? Are there screening measures available that could potentially identify females with the disorder who would not otherwise be identified? Do the males who have qualified for autism really meet the criteria or have they been identified inappropriately? The lack of overrepresentation among African American males may also warrant further investigation. Given the level of overrepresentation among males in general, it would seem that African American males would be no exception. Since African American males are overrepresented in the disability category of emotional disturbance, it may be that African American males with autism are being misidentified with an emotional disturbance. Answers to these questions may be difficult to find, but they might help the school district better understand how to identify students with autism.

Another potential school district application of this study is around individual buildings. Analysis of student level data at buildings may reveal differences in how individual buildings identify subgroups of students. For example, are African Americans of low SES more likely to be identified with a disability at a predominantly higher SES building than they would be at a predominantly lower SES building? Also, how do teacher and administrator attitudes toward special education, low SES, and racial minorities affect identification of students with disabilities? Do these attitudes have an effect on overrepresentation?

Future student level research in subgroup overrepresentation could become available soon. Technology advances in database design have enabled states like Missouri to collect data at the student level for every district in the state. As other states begin to follow suit, student level data can be analyzed while controlling for the

demographic variables. Other demographic variables can also be introduced that may have an influence, such as English language learner status and state assessment scores. While these studies would not be able to control for varying methods of demographic data collection in districts, they could go a long way in further defining the problem of overrepresentation. Multi-state and national studies would still be hindered by varying definitions of disabilities, but student level data could still advance the research. The next section will discuss the methodological implications of this study.

Methodological Implications

The use of student level data in this study has considerable methodological implications. As future research continues to explore the issues of overrepresentation, it is clear that it must take place with student level data. As Skiba (2005) pointed out, use of district level data can over or under estimate the effects of poverty on racial overrepresentation in special education. Only student level data can unequivocally determine the interaction of race, SES, and gender in overrepresentation in special education. Other districts that have problems with minority overrepresentation can use these methods for examining their data as the data are collected as part of the required reports to the state. As was stated previously, it is now possible for the state of Missouri to examine most of these issues with student level data. The only thing the state would not be able to examine would be the use of professional judgment in diagnosing learning disabilities as this data is not collected by the state.

Conclusions

This study has attempted to answer three main research questions. First, does the likelihood of identification with a disability differ by race, SES, and gender? The answer

is a resounding yes. African Americans, low SES students, and males are all much more likely to be identified as having a disability than non African Americans, non-low SES students, and females, respectively. When looking at the subgroups together, however, race is much less important of a predictive factor than gender and SES. Of all three demographic variables, students of low SES are overrepresented in special education the most.

Second, does likelihood of being identified with a particular type of disability differ by race, SES, and gender? Again, the answer is yes. Students of low SES are overrepresented with almost every disability type and males are overrepresented with autism. Race appears to only be a problem when African American students are also low SES or male. Given these results, behavioral and academic interventions should be focused on subgroups with higher risk ratios.

Third, is professional judgment used more often by race, SES, and gender when diagnosing a disability? The results are more mixed with this research question. With a learning disability, gender was the only significant variable associated with use of professional judgment and it contributed the most amount of variance. The amount of variance contributed, however, was small and cannot be considered an important factor in diagnosing a learning disability with professional judgment. In addition, males were less likely to be diagnosed using professional judgment.

The policy implications of this study are potentially high. Since federal policy focuses only on racial disparities in special education, the federal government may need to revisit the issue. Students of low SES and males are more at risk than African Americans. When looking at the variables all together, race is not even an important

factor unless the students are also male or low SES. Policy makers, however, must be careful not to dismiss the issue of racial overrepresentation just because SES is a more important factor. The political will behind addressing racial overrepresentation has traditionally been stronger than for addressing low SES overrepresentation. Policy makers must use the data to target appropriate subgroups such as low SES African Americans. The overrepresentation of males is being completely overlooked. Policies around racial overrepresentation should be expanded to examine gender over or underrepresentation as well. Policy implications at the local school district levels are also potentially high. Other school districts should take the time to analyze their data to see if their results coincide with the results from the school district used in this study. Qualitative and quantitative analyses of building level data may also be helpful in finding additional variables that contribute to subgroup overrepresentation. Any early intervening services or special programs need to be targeted at the subgroups with the most need, specifically low SES and males students, but most especially African American males who are of low SES.

References

American Educational Research Association, American Psychological Association, & National Council On Measurement In Education. (1985). *Standards for Educational and Psychological Testing*. Washington, DC: American Psychological Association.

Artiles, A. J. (1998). The dilemma of difference: Enriching the disproportionality discourse with theory and context. *The journal of special education, 32*(1), 32-36.

Blanchett, W. J. (2006). Disproportionate representation of African American students in special education: Acknowledging the role of white privilege and racism. *Educational Researcher, 35*(6), 24-28.

Blanchett, W. J., Brantlinger, E., & Shealey, M. W. (2005). Brown 50 years later–Exclusion, segregation, and inclusion. *Remedial and Special Education, 26*(2), 66-69.

Bollmer, J., Bethel, J., Garrison-Mogren, R., & Brauen, M. (2007). Using the risk ratio to assess racial/ethnic disproportionaluty in special education at the school-district level. *The Journal of Special Education, 41*(3), 186-198.

Brown v. the Board of Education of Topeka, KS, 347 U.S. 483 (Supreme Court 1954).

Coghlan, D., & Brannick, T. (2005). *Doing action research in your own organization* (2nd ed.). Thousand Oaks, CA: Sage.

Cook, S. D. (2005). What are the Ultimate Meaning and Significance of Brown v. Board of Education? A Note on Justice, Constitutionalism, and the Human Person. *Negro Educational Review, 56*(1), 3-10.

Costenbader, V., & Buntaine, R. (1999). Diagnostic discrimination between social maladjustment and emotional disturbance: An empirical study. *Journal of Emotional and Behavioral Disorders, 7*(1), 2-10.

Coutinho, M. J., & Oswald, D. P. (2005). State variation in gender disproportionality in special education. *Remedial and Special Education, 26*(1), 7-15.

Coutinho, M. J., Oswald, D. P., & Forness, S. R. (2002). Gender and sociodemographic factors and the disproportionate identification of culturally and linguistically diverse students with emotional disturbance. *Behavioral Disorders, 27*(2), 109-125.

Cron, T. (2004). Brown v. board of education: 50 years later. *Principal, 83*(5), 43-47.

Daniels, V. I. (1998). Minority students in gifted and special education programs: The case of educational equity. *The journal of special education, 32*(1), 41-43.

Assistance to States for the Education of Children With Disabilities and Preschool Grants for Children With Disabilities; Final Rule, 34 C.F.R. § 300 and 301 (2006).

Department of Elementary and Secondary Education. (2006). Annual Dropout Rate 2002-2006. from http://www.dese.missouri.gov/schooldata/four/000000/dropnone.html

Department of Elementary and Secondary Education. (2007a). Core Data Collection System Manual Version 19. from http://www.dese.mo.gov/divimprove/coredata/CDmanual.html

Department of Elementary and Secondary Education. (2007b). Missouri Department of Elementary and Secondary Education special education state profile. from http://www.dese.mo.gov/divspeced/PDF/MOProfile.pdf

Department of Elementary and Secondary Education. (2007c). State Plan for Special Education, Part B. from http://www.dese.mo.gov/schoollaw/rulesregs/Inc_By_Ref_Mat/Special%20Education/IDEA%20Part%20B.html

Dunn, L. M. (1968). Special education for the mildly retarded: Is much of it justifiable? *Exceptional Children, 23*, 5-21.

Essex, N. L. (2008). *School law and the public schools : A practical guide for educational leaders* (4th ed.). Boston: Pearson/Allyn and Bacon.

Federal Register, 20 U.S.C. 1418(d)) C.F.R. (2006).

Field, A. (2005). *Discovering statistics using SPSS* (2nd ed.). London: Sage Publications.

Forness, S. R. (1992). Legalism versus professionalism in diagnosing SED in the public schools. *School Psychology Review, 21*(1), 29-34.

Gosa, T. L., & Alexander, K. L. (2007). Family (dis)advantage and the educational prospects of better off african american youth: How race still matters. *Teachers College Record, 109*(2), 285-321.

Harris-Murri, N., King, K., & Rostenberg, D. (2006). Reducing disproportionate minority representation in special education programs for students with emotional disturbances: Toward a culturally responsive response to intervention model. *Education and Treatment of Children, 29*(4), 779-799.

Heppner, P. P., & Heppner, M. J. (2004). *Writing and publishing your thesis, dissertation & research: A guide for students in the helping professions*. Belmont, CA: Brooks/Cole-Thomson.

Hosp, J. L., & Reschly, D. J. (2004). Disproportionate representation of minority students in special education: Academic, demographic, and economic predictors. *Exceptional Children, 70*(2), 185-199.

Imber, M., & Van Geel, T. (2000). *Education Law* (2nd ed.). Mahwah, NJ: Lawrence Erlbaum Assiciates.

Ingersoll, R. M. (2003). The teacher shortage: Myth or reality? *Educational Horizons, 81*(3), 146-152.

Jacob-Timm, S., & Hartshorne, T. S. (1998). *Ethics and Law for School Psychologists* (3rd ed.). New York: John Wiley & Sons, Inc.

Kovas, Y., Haworth, C., Petrill, S., & Plomin, R. (2007). Mathematical ability of 10-year-old boys and girls: Genetic and environmental etiology of typical and low performance. *Journal of Learning Disabilities, 40*(6), 554-567.

Losen, D. (2002a). Minority overrepresentation and underservicing in special education. *Principal, 81*(3), 45-46.

Losen, D. (2002b). New research on special education and minority students with implications for federal education policy and enforcement. In D. Piche, W. Taylor & R. Reed (Eds.), *Rights at risk: Equality in an age of terrorism* (pp. 263-284): Citizens' Commission on Civil Rights.

MacMillan, D. L., & Reschly, D. J. (1998). Overrepresentation of minority students: The case for greater specificity or reconsideration of the variables examined. *The journal of special education, 32*(1), 15-24.

Marshall, C., & Gerstl-Pepin, C. (2005). *Re-framing Educational Politics for Social Justice*. New York: Allyn & Bacon.

Naglieri, J. A., & Rojahn, J. (2001). Intellectual classification of black and white children in special education programs using the WISC-III and the cognitive assessment system. *American journal on mental retardation, 106*(4), 359-367.

National Association of School Psychologists. (2000). Principles for Professional Ethics: Guidelines for the Provision of School Psychological Services.

National Research Council. (2002). *Minority students in special and gifted education*. Washington, DC: National Academy Press.

Nixon, J., Martin, J., McKeown, P., & Ranson, S. (1997). Towards a Learning Profession: Changing Codes of Occupational Practice within the New Management of Education. *British Journal of Sociology of Education, 18*(1), 5-28.

O'Connor, C., & Fernandez, S. D. (2006). Race, class, and disproportionatlity: Reevaluating the relationship between poverty and special education placement. *Educational Researcher, 35*(6), 6-11.

Oswald, D. P., Coutinho, M. J., Best, A. M., & Nguyen, N. (2001). Impact of sociodemographic characteristics on the identification rates of minority students as having mental retardation. *Mental retardation, 39*(5), 351-367.

Oswald, D. P., Coutinho, M. J., Best, A. M., & Singh, N. N. (1999). Ethnic representation in special education: The influence of school-related economic and demographic variables. *The journal of special education, 32*(4), 194-206.

Pulliam, J. D., & Van Patten, J. J. (2003). *History of Education in America* (8th ed.). Upper Saddle River, NJ: Merrill Prentice Hall.

Reid, K., & Knight, M. G. (2006). Disability justifies exclusion of minority students: A critical history grounded in disability studies. *Educational Researcher, 35*(6), 18-23.

Riordan, C. (1990). *Girls and Boys in School: Together or Separate?* New York: Teachers College Press.

Rury, J. L. (2002). *Education and Social Change: Themes in the History of American Schooling*. Mahwah, NJ: Lawrence Erlbaum Associates, Inc.

Salomone, R. C. (2003). *Same, Different, Equal: Rethinking Single-Sex Schooling*. New Haven, CT: Yale University Press.

Schein, E. H. (2000). Sense and nonsense about culture and climate. In N. M. Ashkanasy, C. P. M. Wilderom & M. F. Peterson (Eds.), *Handbook of Organizational Culture & Climate*. Thousand Oaks, CA: Sage Publications.

Serna, L. A., Forness, S. R., & Nielsen, M. E. (1998). Intervention versus affirmation: Proposed solutions to the problem of disproportionate minority representation in special education. *The journal of special education, 32*(1), 48-51.

Skiba, R. J., Poloni-Staudinger, L., Simmons, A. B., Feggins-Azziz, R., & Chung, C. (2005). Unproven Links: Can poverty explain ethnic disproportionality in special education? *The journal of special education, 39*(3), 130-144.

Stoller, K. (2006). The Autism Epidemic A Mystery? Only if One Ignores All the Science. *The Exceptional Parent, 36*(11), 57-58.

The Rehabilitation Act of 1973, Section 504, 29, U.S.C. § 794(a)) C.F.R. (1973).

Tyack, D., & Hansot, E. (1990). *Learning Together: A History of Coeducation in American Schools*. New Haven, CT: Yale University Press.

Wehmeyer, M. L., & Schwartz, M. (2001). Disproportionate representation of males in special education services: Biology, behavior, or bias? *Education and treatment of children, 24*(1), 28-45.

White, B. (2007). Are girls better readers than boys? Which boys? Which girls? *Canadian Journal of Education, 30*(2), 554-581.

Yell, M. L. (2005). *The Law and Special Education* (2nd ed.). Upper Saddle River, New Jersey: Prentice Hall.

Yell, M. L., Rogers, D., & Rogers, E. L. (1998). The legal history of special education: What a long, strange trip it's been! *Remedial and Special Education, 19*(4), 219-228.

Appendix A

Population Numbers and Risk Ratios for Demographic Subgroups in Special Education

	Number of Students				
Demographic Subgroup	Total Students (n_1)	SPED* Students (n_2)	Students Not in Subgroup (n_3)	SPED* Students not in Subgroup (n_4)	Risk Ratio**
Black	5,289	897	18,115	1,828	1.68
Males	12,096	1,837	11,308	888	1.93
Low SES	7,496	1,381	15,908	1,344	2.18
Black, Low SES	3,622	700	19,782	2,025	1.89
Black, not Low SES	1,667	197	21,737	2,528	1.02
Black, Males	2,712	593	20,692	2,132	2.12
Black, Females	2,577	304	20,827	2,421	1.01
Low SES, Males	3,833	891	19,571	1,834	2.48
Low SES Females	3,663	490	19,741	2,235	1.18
Non-Low SES Females	7,645	398	15,759	2,327	0.35
Non-Low SES Males	8,263	946	15,141	1,779	0.97
Low SES, Non-Black	3,874	681	19,530	2,044	1.68
Non-Low SES, Non-Black	14,241	1,147	9,163	1,578	0.47
Non-Black, Female	8,731	584	14,673	2,141	0.46
Non-Black, Male	9,384	1,244	14,020	1,481	1.25

Notes:
*SPED= Special Education

**Risk ratio was calculated using the following formula: $(n_2/n_1)/(n_4/n_3)$

Vita

David Wilson has worked in education for the last 7 years. He is a Nationally Certified School Psychologist as well as certified in Missouri as a school psychologist. He has worked in special education in a single school district during those seven years at various schools at the elementary and secondary level. For the last three years he has served the staff and students at a school for students with behavioral and emotional disturbance. He has also served in the role of data coordinator for the special services department and coordinated hiring and inservice development for paraprofessionals.

David received his Bachelor's, Master's, and Educational Specialist degrees from the University of Missouri in the area of Educational and Counseling Psychology. He received a minor in math during his undergraduate studies. His emphasis area for his Master's and Educational Specialist degrees was in school psychology. He is a member of the National Association of School Psychologists and the Missouri Association of School Psychologists. In 2005, he won the Missouri School Psychologist of the Year award from the Missouri Association of School Psychologists and was subsequently nominated for the national award. His most recent accomplishment was the conferment of the Educational Doctorate in Educational Leadership from the University of Missouri.