AN INVESTIGATION INTO THE APPARENT OVER-REPRESENTATION OF BLACKS IN EDUCABLE MENTALLY HANDICAPPED PROGRAMS IN K-12 SCHOOLS WITHIN THE 67 FLORIDA PUBLIC SCHOOL DISTRICTS

by

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A dissertation submitted in partial fulfillment of the requirements
for the degree of Doctor of Education
in the Department of Educational Foundations
in the College of Education
at the University of Central Florida
Orlando, Florida

Spring Term
2004

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ABSTRACT

Placement into educable mentally handicapped (EMH) programs is necessary for some students in order to allow them the opportunity to receive an education appropriate for their special needs. Nonetheless, identification as EMH is often perceived as negative and demeaning. Decades of research have substantiated the over-representation of black students into certain categories of special education, including EMH, in comparison to white and Hispanic students. This disparity has raised questions within schools, academe and research communities, and legislative and governing bodies as to the causes, compelling factors, and related variables impacting the phenomenon.

This study investigated the apparent over-representation of blacks identified as EMH in the 67 public school districts in Florida in 2001–2002. It also analyzed the effects certain school district characteristics had on the identification of white, black, and Hispanic students as EMH.

Analysis of data derived from the Florida Department of Education database for school year 2001–2002 led to the following findings: (1) there was over-representation of blacks in EMH within the 67 public school districts in Florida, since results showed that blacks were identified as EMH 2.5 times more often than whites and Hispanics; (2) socioeconomic status of school districts had a significant effect on the identification of black students as EMH; for example, when the school district was identified as a high socioeconomic status district, there was a greater likelihood that a larger proportion of black students would be identified as EMH; (3) as the wealth of school districts rose, there was a significant likelihood that the proportion of

black students identified as EMH would also rise; (4) black students had a greater likelihood of being identified as EMH in suburban school districts; (5) blacks were over-identified in school districts that had 60,000 to 89,000 students; (6) when there was a high percentage of white, full-time, non-instructional staff (80% or more) in school districts, blacks had a greater likelihood of being over-identified as EMH; (7) blacks were three times more likely to be identified as EMH regardless of the type of degrees teachers had; and, (8) as district expenditure per student (FTE) increased, the tendency for over-identification of blacks as EMH decreased. For every variable analyzed, the proportion of black students identified as EMH was significant when compared to the proportions of white and Hispanic students also identified as EMH.

ACKNOWLEDGMENTS

My sincere thanks go to all my committee members, especially to my committee chairperson, Dr. Barbara Murray. She believed in me from the very onset of my doctoral classes and encouraged me to keep striving to complete this dissertation even when I was at the breaking point. Her tireless hours spent reading and correcting my paper forced me to try harder at each re-write. I extend special thanks to Dr. Lea Witta, who taught me the intricacies of statistics and research and who held my hand through this research analysis and interpretation. I thank Dr. Rose Taylor for keeping me focused on the topic. Her objective reading of the drafts and her astuteness re-shaped my passion for this topic and helped me to strive for balance throughout this process. Many thanks go to Dr. Cheryl Green who kept me inspired when I felt discouraged and who maintained my sense of humor through her words of wisdom. I thank Dr. Carl Balado who whetted my thirst for the discipline of school psychology and for the extended loans of his texts.

Special thanks are extended to my editor, Ms. Karen Lane, who spent numerous hours proofreading, editing, and correcting this document. Her many emails drove me to ferret out the correct documentation and references. I also thank the counselors at the University of Central Florida's Writing Center who edited my first rough draft and helped me immensely with their insights on writing.

I owe a special vote of thanks to my supervisors and colleagues at the Urban Cohort Learning Community of Orange County Public Schools. I thank my family and friends who were my cheerleaders, coaches, prayer partners, and support group. Finally, I thank my husband,

Patrick, and my two teenage sons, Malcolm and Duncan, for being so helpful, cooperative, and understanding, especially when Mom had no time to cook dinners, help with homework, read a book with you, listen to your issues, or spend quality time with you.

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CHAPTER 1

THE PROBLEM AND ITS CLARIFYING COMPONENTS

Introduction

Over-representation of black students in the educable mentally handicapped (EMH) category of special education has been of concern to many educators for about thirty years. Since the edict of the 1975 Public Law 94-142 mandated free and appropriate education for all children, many students, especially black students, are being over-identified and served under the umbrella of EMH. The revised Individuals with Disabilities Act (IDEA) of 1997 mandates that the local and state level of education monitor and report disproportionality of racial student placement into special education. Several researchers have also called on district, state, and national-level administrators to monitor special education placements and the nature of instructional services offered, with particular attention to racial concerns (Lambert, 1988; Oswald, Coutinho, Best, & Singh, 1999; Zhang & Katsiyannis, 2002).

Increasingly, a disproportionate number of black students is labeled EMH (MacMillan & Reschly, 1998). Approximately 3% of the American population has a mental handicap, ranging from mild to severe. Research findings indicate that between 2.75% and 5.41% of black students tend to be identified as EMH, which is a mild form of mental handicap (Henson, 2003; Ysseldyke & Algozzine, 1990). Students who have an intelligence quotient (IQ) score of less than 70 but more than 55 are classified as EMH and thus qualify for special education services (Harper & Harper, 1998).

Approximately 41% of special education students are from linguistically and culturally diverse backgrounds. Based on a review of the literature, black students experience over-representation in EMH programs (Civil Rights Project, 2002; Grossman, 1998; Moore & Cooper, 1984). Although in 1998 they accounted for only 12% of the nation's elementary and secondary school population, they constituted 28% of the total enrollment in special education (Grossman, 1998; Harper & Harper, 1998; Zhang, & Katsiyannis, 2002).

According to the Civil Rights Project (2002), certain states and school districts tend to exhibit an over-representation of black students with the label of EMH. Southern states constituted nearly three-quarters of the states with unusually high incidence levels; between 2.75% and 5.41% of black students enrolled in schools were classified as EMH. These states include Mississippi, South Carolina, North Carolina, Florida, and Alabama.

Since approximately 1.4% of the school-age population is identified with a mild (educable), moderate (trainable), severe, or profound mentally handicap (Ysseldyke & Algozzine, 1990), it would therefore seem quite unlikely that such large percentages of black students (2.75% to 5.41%) would be classified as EMH. The reasons cited for this over-representation of black students and other minority students thus labeled include prejudice and discrimination, teacher bias, and cultural bias within the testing instruments (Grossman, 1998; Harry, 1992; Low & Clement, 1982; Moore & Cooper, 1984; Simpson & Erickson, 1983).

Other researchers, such as MacMillan & Reschly (1998), alluded to the idea that black students might have been over-identified into this category because of poverty. Since a disproportionate number of black students live in poverty, there is a greater likelihood they would be identified as EMH. These authors stated, "When ethnicity is the only independent variable, interpretations tend to emphasize the 'figment of the pigment'" (p. 6).

Oswald et al. (1999) conducted a study using a nationally representative sample of 4,902 school districts comprising more than 43,000 schools across the nation and found that the six environmental variables they selected for measurement (housing, income, poverty, at risk, dropout, and Limited English Proficiency – LEP) were all significantly related to the probability of being in the EMH program. These researchers also found that when demographics and poverty were held constant, the evidence overwhelmingly substantiated that over-identification into EMH was significantly influenced by race.

The literature review discusses several causes for EMH. These include hereditary factors, alterations of embryonic development, pregnancy and prenatal problems, physical disorders acquired in childhood, and environmental influences, especially poverty (Algozzine, Ysseldyke, Kauffman, & Landrum, 1991; American Psychiatric Association, 1994; Henson, 2003; MacMillan & Reschly, 1998; Oswald et al., 1999).

All students with handicapping circumstances are legally entitled to free and appropriate education under IDEA. However, these children are often relegated to services in non-inclusionary classroom settings that reduce the time they spend with non-disabled peers. While there is certainly a need to provide EMH students with special educational services to help them learn and develop, services should be of the very best quality possible to meet students' needs and to help them grow and develop as other, non-disabled students. Nevertheless, it would appear that too many students, including black students, might be misdiagnosed and mislabeled as EMH and thus placed into special education classes that provide them with less of a chance to succeed in today's competitive society. Patton (1998) pointed out that many students are inappropriately staffed into special education and as a result, they "fail to receive a quality and

life-enhancing education" since they "miss essential general education academic and social curricula" (p. 25).

Problem Statement

Over-representation of black students is a problem when it comes to EMH, because of the perceptions and stigma it evokes for the individual students, their families, the community, and the wider population (MacMillan & Reschly, 1998). It also gives the impression that black students in general are not intelligent. This identification creates an assumption that they cannot learn and for the most part are deemed to lead a substandard existence, especially since intelligence, via education, has its greatest effect in the assortment of individuals into occupational roles (Jensen, 1969).

The literature suggests that the socioeconomic status of students bears a significant relationship to the identification and placement of students into EMH. Children who live in poverty have a greater likelihood of being recognized as EMH (Artiles & Trent, 1994; MacMillan & Reschly, 1998; Monson, 2003; Newman, 1995; Oswald et al., 1999; Yeargin-Allsopp, Drews, Decoufle, & Murphy, 1995).

Characteristics of the public school district may also influence identification of these children. In measuring socioeconomic status, White, in his 1982 analysis of more than 70 different variables used to measure SES, found that the top three variables in the school resources category were instructional expense per pupil, salary of teachers, and percentage of teachers with master's degrees (Valencia & Suzuki, 2001). Hence, two of these variables, namely, expenditure on students' education or FTE and teachers' advanced learning, along with school district's wealth, population density (urbanicity), size, and racial composition of full-time,

non-instructional staff have been included as the characteristics of school districts that will be analyzed to measure their effects on the identification of black students in EMH.

Purpose of the Study

The purpose of this study is two-fold. One is to investigate relevant data to see if over-representation of black students existed in Florida's 67 public school districts in 2001–2002. The other is to analyze the effects of certain characteristics of Florida public school districts on the identification of black students in programs for EMH. The desired outcome of this investigation is to produce information relevant to educational leaders in Florida public school districts that will help to produce dynamic strategies resulting in the reduction of the over-identification of black students as EMH if this situation is occurring.

Definitions of Terms

The following definitions are provided for terms that have application for this study.

Over-representation of a given racial group: a situation in which the proportion of a racial group enrolled in a given category of special education exceeds the proportion of that racial group in the school population at the school, district, state, or national level (MacMillan & Reschly, 1998).

Special education: specially designed instruction, provided at no cost to the parent, to meet the unique needs of a child with a disability, particularly a child with mental handicap (Harper & Harper, 1998).

Mentally handicapped: significantly subaverage general intellectual functioning existing concurrently with deficits in adaptive behavior and manifested during the development period,

which adversely affects a child's educational performance (Harper & Harper, 1998). The IQ score on a psychoeducational test will be less than 70.

Educable mentally handicapped (EMH): the classification assigned to a person whose IQ score falls in the range of 55 to 69 (Sattler, 2001).

Adaptive behavior: the effectiveness or degree with which the individual meets the standards of personal independence and social responsibility expected of his or her age and cultural group (Ysseldyke & Algozzine, 1990). These personal independence and social responsibility categories are further broken down into areas of communication, home living, community use, health and safety, leisure, self-care, social skills, self-direction, functionality, academics, and work (Henson, 2003).

Black: a non-white, non-Hispanic person having origin in any of the black racial groups in Africa (Florida Department of Education, 1994). This researcher is using this term consistently throughout this paper. However, when referring to other authors, this term is used interchangeably with "minorities" and "African Americans."

White: a non-Hispanic person having origin in any of the original peoples of Europe, North Africa, or the Middle East (Florida Department of Education, 1994).

Hispanic: a person of Mexican, Puerto Rican, Cuban, or South or Central American origin or other Spanish culture or origin, regardless of race (Florida Department of Education, 1994).

Environmental deprivation: social, biological, and cultural influences that are withheld from, or are minimally afforded to children that can result in a mental handicap (Jensen, 1969).

Socio-economic status: an indicator measured by the percentage of enrolled students who are receiving free or reduced lunch for the school year 2001–2002 as reported by the Florida Department of Education database.

School district: a public school district.

School district wealth: the non-exempt, assessed valuation of property divided by the total student enrollment within that school district (wealth of the district per student).

Rural school district: a public school district identified by the Florida Department of Education as one of the 37 public school districts within the three rural regional consortia. These consortia are the Heartland Educational Consortium, the North East Florida Educational Consortium, and the Panhandle Area Educational Consortium.

Urban school district: a public school district in Florida not defined by the Florida Department of Education that has within it a major metropolitan city. The five metropolitan cities are Fort Lauderdale, Jacksonville, Miami, Orlando, and Tampa.

Suburban school district: a public school district not identified by the Florida Department of Education as rural and which does not meet the criteria for an urban public school district.

School district expenditure per student: the expense per full-time equivalency (FTE) for the 2001–2002 school year.

Limitations of This Study

Data were collected from the 67 public school districts in Florida over a one-year period, that is, school year 2001–2002, as reported to the Florida Department of Education (DOE). The organization of public school districts that coincide with the 67 counties tends to concentrate wealth. The actual numbers for whites, blacks, and Hispanics might overlap due to racial

classification given by parents or school officials regarding the racial groups in which some students might be included. For example, a black Hispanic student might be classified as black or as Hispanic. Certain school districts' data might have skewed the results of the research analysis, but these were not excluded, because the analysis was intended to include all 67 school districts. Dade, with its large student enrollment, and Monroe, with its large wealth base, are just two examples of school districts that might have skewed the results of the analysis. The definitions of rural, urban, and suburban school districts might be unique to the state of Florida.

Delimitation

This study was delimited to include all 67 public school districts in Florida.

Conceptual Framework

The effects of poverty, race/ethnicity, and limited English proficiency complicate the identification and assessment of students for EMH. IDEA, the federal law that guarantees students with disabilities the right to free and appropriate education in the least restrictive environment, was reauthorized, in part, to address race-based disproportionality in special education programs (Paolino, 2002). The section of the law relevant to this topic reads as follows:

> 300.755 Disproportionality
>
> (a) General. Each State that receives assistance under Part B of the Act, and the Secretary of the Interior, shall provide for the collection and examination of data to determine if significant disproportionality based on race is occurring in the State or in the schools operated by the Secretary of the Interior with respect to -
>
> (1) The identification of children as children with disabilities, including the identification of children as children with disabilities in accordance with a particular impairment described in section 602 (3) of the Act; and
>
> (2) The placement in particular educational settings of these children.

> (b) Review and Revision of Policies, Practices, and Procedures. In the case of a determination of significant disproportionality with respect to the identification of children with disabilities, or the placement in particular educational settings of these children, in accordance with paragraph (a) of this section, the State or the Secretary of the Interior shall provide 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 Part B of the Act (Authority:20 U.S.C. 1418(c)).

Several court cases have dealt with over-representation in EMH over the years. Perhaps the most notable was the *Larry P* case of 1972. In the court settlement, the state of California was ordered to stop using any standardized intelligence tests with black students when they were referred as possible candidates for EMH. Other well-known cases include the *Diana v. California State Board of Education* (1970), *PASE v. Hannon* (1980), and *Marshall et al. v. Georgia* (1984) (Reschly & Bersoff, 1999; Swanson & Watson, 1989). These cases are discussed in detail in the literature review.

The U.S. Office of Civil Rights (OCR) tracks the proportionality of black children in several categories of special education among the 50 largest school districts in the United States. Notwithstanding the legal precedence, these school districts have consistently shown over-representation of black students in the EMH and emotionally handicapped categories of special education. However, since a disproportionate number of black students who live in large metropolitan cities also live in poverty, the research seems to infer that disproportionality of blacks into these categories of special education has to do less with race and more with poverty (MacMillan & Reschly, 1998). In an earlier investigation, another researcher, Hodgkinson (1995), came to similar conclusions.

> To some extent, race diverted our attention from the most urgent issue: poverty reduces the quality of the lives of all children, regardless of race or ethnicity. Had we spent the 40 years since the Brown decision systematically seeking to lower the poverty level of all American children, we would be in a different, and probably better, condition today. As

> racial and ethnic characteristics blur over the coming decades, poverty will become an even more obvious problem than it has been. (pp.178–179)

The relationship between poverty and race and the placement of students into EMH are also discussed at great length in the literature review.

Since one aspect of the identification and placement of students into EMH relies on the role that IQ tests play, these protocols also came under discussion. Those who are critical of using IQ tests argue that these tests are culturally loaded (Cummins, 1984), reflect a stylistic mismatch between students and schools (Hilliard, 1987/1992), are standardized on a sample of American students that does not sufficiently represent black students and what they know (Kaufman, 1975), and do not inform teaching and learning (Hilliard, 1987/1992). Those defending the use of IQ tests for identifying students with EMH agree that while they may not measure the learning potential of black students, they may accurately predict the academic performance of students in a mainstream setting and consequently have predictive validity (Sattler, 2001).

Research Questions

1. Is there an over-representation of black students in EMH in the 67 public school districts in Florida?
2. Does the socioeconomic status of school districts affect the proportions of white, black, and Hispanic students identified as EMH?
3. Does the wealth of school districts affect the proportions of white, black, and Hispanic students identified as EMH?
4. How do the characteristics of public school districts (population density or urbanicity; size of districts based on student enrollment; racial composition of the full-time, non-

instructional staff; percentage of teachers with bachelor's degrees; and districts' expenditure per student) affect the proportions of white, black, and Hispanic students identified as EMH?

Hypothesis 1: There is no statistically significant over-representation of blacks in EMH in the 67 public school districts in Florida at the .05 significance level.

Hypothesis 2: There is no statistically significant difference between the proportions of white, black, and Hispanic students identified as EMH when the socio-economic status of school districts is the independent factor of measurement at the .05 significance level.

Hypothesis 3: There is no statistically significant difference between the proportions of white, black, and Hispanic students identified as EMH when school district wealth is the independent factor of measurement at the .05 significance level.

Hypothesis 4: There is no statistically significant difference between the proportions of white, black, and Hispanic students identified as EMH when the characteristics of the school districts are the independent factors of measurement at the .05 significance level.

Methodology

Data were collected from all 67 public school districts in Florida as reported to the Florida Department of Education database for the school year 2001–2002. The Statistical Package for Social Science (SPSS) Graduate Package (11.0) was used to analyze the data. Other calculations were done to analyze the school districts' variables measured in this research. These variables included socioeconomic status; wealth; population density (urbanicity); size; racial makeup of full-time, non-instructional staff; degree status of teachers; expenditure per student (FTE); and the proportions of white, black, and Hispanic students who were identified as EMH

in all 67 school districts. Further analyses were done using the general linear model with repeated measures.

Data Collection and Analysis

SPSS Graduate Package (11.0) was the main statistical tool used to analyze the data that were collected from the Florida Department of Education database. The first purpose of the research was to determine if there was an over-representation of black students in EMH in Florida in 2001-2002, based on the definition presented previously. Second, the researcher sought to identify any significant difference between the proportions of white, black, and Hispanic students identified as EMH when socioeconomic status of school districts was the independent factor of measurement. Third, this investigator sought to identify any significant difference between the proportions of white, black, and Hispanic students identified as EMH when public school district wealth was the independent factor of measurement. Finally, this researcher examined some of the characteristics of the school districts and sought to identify any significant difference in the proportions of white, black, and Hispanic students identified as EMH when these characteristics were the independent factors of measurement.

Significance of the Study

From this analysis of Florida's public school districts, a determination was made concerning whether disproportionality of black students identified as EMH occurred in school year 2001–2002. This analysis will support school districts in meeting the requirements of the IDEA law. It will also fulfill the mantra of education that all children can learn and that no child should be left behind.

Organization of the Study

Chapter 1 contains a statement of the purpose of the study, its components, and the research questions. Chapter 2 presents a review of the related literature and research relevant to the problem. Chapter 3 describes the methods and procedures used in the collection of data. Chapter 4 includes the data analysis with an emphasis on the results obtained from the study. Chapter 5 contains conclusions, recommendations, and implications of the study along with recommendations for future research.

CHAPTER 2

REVIEW OF LITERATURE

Introduction

This literature review establishes a foundation for analyzing the over-representation of blacks in educable mentally handicapped (EMH) programs that are served by special educational services within the school setting. The review is divided into nine parts: historical perspectives; demographic characteristics; causes for the over-representation; environmental and socioeconomic factors; psychological testing, assessment, classification, and placement; measures of intelligence; legislation and court cases; obstacles to change; and researchers' thoughts for reducing over-representation of blacks in EMH.

Historical Perspectives

The history of mental handicap dates back to the beginning of human life on earth. The first written documentation on mental handicap dates back to Egypt around 1500 BC. Although somewhat vague due to difficulties in translation, documents written on papyri clearly refer to mental handicap due to brain damage (Sheerenberger, 1983). The plight of people with mental handicap depended upon the mores of the era and the culture or locale. In ancient Greece and Rome, infanticide was a common method to do away with mentally handicapped young children. In the second century AD, individuals with a mental handicap who lived in the Roman Empire were usually sold for entertainment or amusement. It was during the early rising of Christianity

that many of these barbaric practices declined, as great religious leaders advocated more humane treatment for the mentally handicapped and the infirm.

During the Middle Ages, the status and care of people with a mental handicap varied greatly. Many children were sold into slavery, abandoned, or left out in the cold (Sheerenberger, 1983). By the 1800s, residential training schools were set up in many states in the U.S. to instruct these individuals in basic self-care skills and to provide vocational training (Biasini, Grupe, Huffman, & Bray, 2003).

During the early part of the twentieth century, residential training schools proliferated, and individuals with a mental handicap were enrolled in large numbers. This trend was partly influenced by the availability of intelligence tests such as the Stanford- Binet. The standard belief at the time was that people with a mental handicap could be cured with proper training. When training schools were unable to "cure" these individuals, they became overcrowded, and many of the students returned to their home environment. The training schools eventually became custodial living centers (Biasini et al., 2003).

As a result of the disillusionment with residential treatment, advocacy groups, such as the National Association of Retarded Citizens and the Presidents' Commission on Mental Retardation, were established in the 1950s through the 1970s. The Wyatt-Stickney federal court action in the 1970s was a landmark class-action lawsuit in Alabama establishing the right to treatment of individuals living in residential facilities (Biasini et al., 2003).

Concurrent with this case, the U.S. Congress passed the Education for All Handicapped Children Act in 1975, better known as Public Law 94-142. Public Law 94-142, the first compulsory special-education law, came into being to address the services that students with handicaps needed to be successful in school. It mandated the following conditions: (a) a free,

appropriate, public education for handicapped students between the ages of 3 and 21, (b) well-planned school programs tailored to meet students' unique learning needs, (c) protection of the rights of handicapped students under the same legal provisions that protect the rights of non-handicapped students (due process), (d) the right of exceptional students to have decisions made about them in an unbiased manner, and (e) educational environments similar to those provided to non-handicapped students (Ysseldyke & Algozzine, 1990). Public Law 94-142 guaranteed "free appropriate public education" for all children with a broad range of handicaps and called for school districts to provide such schooling in the "least restrictive environment" possible (Biasini et al., 2003; Pardini, 2002).

Reauthorized in 1990 and 1997, Public Law 94-142 was renamed the Individuals with Disabilities Education Act (IDEA). This act has spawned the delivery of special education services to millions of students who were previously denied access to an appropriate education (Pardini, 2002). Today, most states guarantee intervention services to children with handicaps from birth to 21 years of age (Biasini et al., 2003).

Current classification practices in mental handicaps are traceable back to the nineteenth century. Very derogatory terms like "idiot" and "imbecile" were used to describe people with a mental handicap at that time. In 1910 Goddard developed the term "moron" to categorize feeble-minded people. An idiot was an individual whose development was arrested at the level of a 2-year-old; imbecile, an individual whose development was equivalent to that of a 2- to 7-year-old at maturity; and moron, an individual whose mental development was equivalent to that of a 7- to 12-year-old at maturity (La Griffe du Lion, 2000; Sheerenberger, 1983). These terms are now obsolete and considered offensive.

Binet and Simon, under the commission of the Minister of Public Instruction in Paris, France, developed the IQ test in 1905, for the explicit purpose of identifying children who were less likely to fail in school (Jensen, 1969; La Griffe du Lion, 2000). However, Goddard first popularized the use of intelligence testing to measure differences among people, linking their performance on tests to diagnostic classification labels for various conditions (Ysseldyke & Algozzine, 1990).

States now use a variety of terms to label students who are EMH. These labels include mentally retarded, educationally retarded, educationally handicapped, mentally handicapped, and significantly limited intellectual capability. For educational purposes, distinctions are usually made between mild, moderate, severe, and profound mental handicaps (Ysseldyke & Algozzine, 1990). About 1% of the school-age population is identified as EMH (a mild form of mental handicap) and thus receives special education services.

Five general causes of mental handicap are offered in the literature:

1. Hereditary factors (inborn errors of metabolism, genetic abnormalities, chromosomal abnormalities, Rh blood-factor incompatibility). Downs syndrome is the best known of these factors (American Psychiatric Association, 1987; Henson, 2003).
2. Alterations of embryonic development due to maternal ingestion of toxins (alcohol, drugs, and radiation), infections (maternal rubella, measles), cerebral malformation, or unknown causes (American Psychiatric Association, 1987; Henson, 2003).
3. Pregnancy and prenatal problems (prematurity, trauma, fetal malnutrition, prolonged birth, and reduction of oxygen to the infant's brain) (American Psychiatric Association, 1987; Henson, 2003).

4. Physical disorders acquired in childhood (lead poisoning, infections, traumas, brain disease, chicken pox, measles, meningitis, whooping cough, fever, lack of certain chemicals in the blood, or glandular imbalance) (American Psychiatric Association, 1987; Henson, 2003).
5. Environmental influences (psychosocial deprivation, sensory deprivation, severe neglect, malnutrition, and complications of severe mental disorders) (American Psychiatric Association, 1987; Ysseldyke & Algozzine, 1990).

The characteristics of EMH are circular, because students are identified and diagnosed based on the criteria that are used later to describe them. Their mental or intellectual skills are subaverage, so this is the primary feature. Since adaptation to one's social and physical environment depends on intellectual ability, it follows that persons with EMH are likely to demonstrate significant differences from others. If they do not, then classification as EMH is erroneous, despite the IQ (Henson, 2003).

Due to subaverage intellectual functioning, persons with EMH are likely to be slower in reaching levels of academic achievement equal to their peers. Notwithstanding, many of these students are ultimately able to reach some level of literacy but over a longer period of time. Due to diminished intellectual functioning and associated neurological conditions, many children with EMH have delayed language and speech problems, have slower physical development, and may even have some forms of associated physical problems. They may also have difficulty focusing, which is more noticeable in terms of developmental delay, than that of their age peers. Children with EMH also have impairments in memory, particularly short-term memory, especially if the facts or complexities of the learning situation are not readily apparent. They also have difficulty with generalization of skills because of their limited ability to think abstractly.

Finally, because of their limited intellectual ability, children with EMH manifest limitations in adaptive skill areas. They have difficulties in making important or reasonable decisions that would allow them to adjust to new circumstances and problems (Henson, 2003).

Many parents have negative feelings about the labeling of their children as EMH. Parents and children often have difficulty overcoming the stigma and the negative views that have been historically and socially attached to this label. Many studies reported negative effects including bias for the EMH label (Ysseldyke & Algozzine, 1990). However, without the labeling, the children would not have been identified for special services.

Gallagher in his 1976 study and Algozzine and Mercer in their 1980 research reported that there are some presumed advantages in labeling. They suggested that labeling serves as a means for beginning a classification, diagnosis, and treatment sequence to intervene and overcome certain negative conditions. Therefore, the major advantage for labeling is the admission to some form of special or differential treatment. Labeling also serves as the basis for further research into the etiology of the condition and into prevention and possible treatment applications of this condition in the future. Finally, these researchers felt that labeling is a means of calling attention to a specific problem in order to obtain additional resources through special legislation and funding (Ysseldyke & Algozzine, 1990).

Demographic Characteristics

The Center for Education Reform (2004) retrieved data from the U.S. Department of Education that showed that the total number of students in public schools in 1998–1999 was 46.5 million. National enrollment indices projected by the U.S. Bureau of Census indicated that by the year 2000, minority enrollment in the U.S. would be between 40% and 60% of the population of

all children in public schools. The enrollment projections are between 57% and 60% for the states of New York and California. According to a 1986 article in *Education Week,* the greatest increases for black children in public school are in New York State, along the eastern seaboard states and through Mississippi, Alabama, and westward to California (Agbenyega & Jiggetts, 1999).

By 1986, black children were in the majority in elementary schools in California. In Texas, black and Hispanic children made up 46% of students at all levels in the public school system. In fact, according to *Education Week,* minority children made up majorities in the 25 largest school systems in the nation as of 1986 (Agbenyega & Jiggetts, 1999). They are now considered the "majority minorities" (Benner, 1998). In the autumn of 1993, the minority student figure for Chicago was 89%; Houston, 88%; Los Angeles, 88%; Baltimore, 84%; Miami 84%; and Philadelphia, 78% (Oswald et al., 1999).

According to Henson (2003), only 3% of the total U.S. population has all types of mental handicap, from mild to profound. Persons with EMH represent approximately 0.45% of the total U.S. population. About 11% of all students nationwide receive special education services. In 1998, approximately 1.5 million minority children were identified as having some type of mental handicap, emotional disturbance, or specific learning disability (Fine, 2001). Of this figure, more than 876,000 were blacks or Native Americans. A large percentage, perhaps as much as 41%, of special education students are from linguistically and culturally diverse backgrounds (Civil Rights Project, 2002).

Blacks experience the greatest over-representation in most special education programs. Although blacks accounted for only 12% of the nation's elementary and secondary school population, in 1998 they constituted 28% of the total enrollment in special education. They are

also over-represented in programs for students with EMH and behavior disorders (Grossman, 1998; Harper & Harper, 1998).

Researchers have found that minority students tend to be over-represented in special education programs in states or school districts with high proportions of ethnic or linguistic minorities or poor individuals (Harry, 1992; Noel & Fuller, 1985). According to a report by the Civil Rights Project at Harvard University, black students are classified as needing special education more often than white students and are less likely, once they have been identified as having handicaps, to be placed in mainstream classrooms (Fine, 2001).

The data also revealed that there is massive regional disproportion in minority representation. A disproportionate minority over-representation of students classified as EMH occurs most frequently in the southern states and in states bordering the south. Southern states constituted nearly three-quarters of the states with unusually high incidence levels, where between 2.75% and 5.41% of black students were labeled as EMH (Civil Rights Project, 2002). In Mississippi, South Carolina, North Carolina, Connecticut, and Nebraska, black students are more than four times as likely to be identified as EMH as are white students living in those states. In Florida, Alabama, Delaware, New Jersey, and Colorado, the number of black students identified as EMH was more than three times that of white students. With some notable exceptions, minority disproportion does not appear to be as general a problem in the Northeast or the Midwest as it is in the South. Minority disproportion is also relatively low in the West (Heller, Holtzman & Messick, 1982). In contrast, the prevalence of EMH for whites nationally was approximately 0.75% in 2001, and in no state did the incidence of EMH among whites rise above 2.32 % (Civil Rights Project, 2002).

Zhang and Katsiyannis (2002) also reported similar findings in their study. They found that black students and American Indian/Alaskan students were over-represented in all major categories of special education (mental handicap, emotional disabilities, and learning disabilities). These researchers also found that the percentages of blacks with EMH in the Northwest and East Central states such as Ohio, Tennessee, and West Virginia were significantly higher than the percentages in the West and Northeast regions (Zhang & Katsiyannis, 2002).

Despite litigation, monitoring, and compliance activities, Congress has found disproportionate representation to be particularly troubling because racial and ethnic diversity is increasing. In 1990 the U.S. population consisted of 75% whites, 12% blacks, 9% Hispanics, 3% Asians and Pacific Islanders, and 0.8% Native Americans (U.S. Bureau of Census, 1992a). By the year 2050, the percentage of whites is expected to decrease to 52.7%; blacks will increase to 16.2%, Hispanics to 21.1%, Asian and Pacific Islanders to 10.7%, and Native Americans to 1.2% (U.S. Bureau of Census, 1992b).

Causes for Over-Representation

Over-representation is a problem when it appears in special education enrollments, because of the perceptions held regarding the effectiveness of treatment by the various programs and the perceived stigma associated with specific labels (MacMillan & Reschly, 1998). It is also a problem if children are invalidly placed in programs for EMH students. Disproportion may also become a serious issue if children are unduly exposed to the likelihood of EMH placement by being in schools or classes with poor quality regular instruction. Disproportion may even have negative effects on students' lives if the quality and academic relevance of instruction in special classes block students' educational progress or decrease the likelihood of their return to the

regular classroom (Heller et al., 1982). Disproportion can also have deleterious consequences with regard to the growing use of high-stakes tests that burden poorly taught children with grade-level retention and diploma denial (Civil Rights Project, 2002).

Artiles and Trent (1994), in their review of the disproportionate percentage of minority students in special education, identified a number of variables that affect the referral, identification, and placement process. These include

1. Litigation and the growth of understanding by educators of students' rights to an education.
2. The ongoing debate about systemic issues such as the pre-referral, referral, and assessment processes, and the possible biases inherent in these procedures.
3. The debate surrounding the basic constructs (i.e., learning disabilities and mental handicaps) and their definitions.
4. Socioeconomic status of the home and family environment and its effect on learning and the learning process.
5. Characteristics of the students.
6. School success and school failure as seen in the quality of instruction received.
7. The correlation between historical contexts, cultural diversity, and disability (Artiles & Trent, 1994; Heller et al., 1982).

Another researcher, Grossman (1998), suggested that one of the main causes of inequality in special education is bias. In some areas, biased white students who are in the majority make it difficult for minority students to learn, because they become very anxious about the treatment they receive from their white peers.

While many teachers do not discriminate against students, some teachers might practice discrimination unconsciously if they believe that different racial groups have different intellectual capacities and that black children, in particular, inherit lower intellectual ability. Therefore, they might have low expectations for them (Grossman, 1998; Samuda, Kong, Cummins, Pascual-Leone, & Lewis, 1989). A few school administrators, teachers, and psychologists might even treat poor students and certain black students differently, and their treatment reflects the biases that exist in the larger society (Fine, 2001; Grossman, 1998).

Teacher expectation for some students tends to be prejudicial (Harry, 1992). Many special educators and even special education students expect white students in their classes to do better academically than minority and poor students. This phenomenon begins in preschool and continues through college (Grossman, 1998). Some educators also expect minority students to be more disruptive and deviant than white students, and these expectations become self-fulfilling prophecies.

Black and poor students are at greater risk to be on the receiving end of teacher bias. Teachers, for example, are 3.5 times more likely to identify poor black students as EMH than they are to identify white students as EMH (Fine, 2001; Meier, Stewart, & England, 1989; Oswald et al., 1999). When evaluating black students, some teachers tend to judge their work, performance, intellectual abilities, and social skills to be lower than objective data would indicate (Frame, Clarizio, Porter, & Vinsonhaler, 1982).

Many studies show that some teachers tend to treat minority and poor students unfairly. In relation to white pupils, teachers praise black students less and criticize them more, and the praise these students receive is usually routine, rather than feedback for a particular achievement or behavior (Moore & Cooper, 1984; Simpson & Erickson, 1983; Washington, 1982). Some

teachers interact more with white students than with black students. A number of teachers give black students less attention, and some are less likely to respond to black students' questions or to direct questions to them (Moore & Cooper, 1984).

Some instructors also appear to use different classroom management styles with black and white students. In general, some teachers of classes with high percentages of black students tend to be more authoritarian and less likely to use the open classroom approach (Moore & Cooper, 1984). They also spend more time watching for possible misbehavior by black students, especially males. When male students misbehave, some teachers tend to criticize black males' behaviors more harshly and use more severe punishment, including corporal punishment and suspension. When females are disruptive, the educators treat black females more harshly than they do white females (Moore & Cooper, 1984; Simpson & Erickson, 1983; Washington, 1982).

Taylor (1979) reported that some educators also discriminate against students who are unlike them because they fear them. White teachers may be aware of the ways in which blacks, Hispanics, Native Americans, and poor people in general were and continue to be treated by society. They are usually aware of the unemployment, poverty, racism, and discrimination these students and their families face. Some teachers often sense the resentment, anger, and mistrust these students harbor towards the white establishment, and so they may be afraid of the periodic, angry explosions students release when their tolerance levels have been reached.

Samuda et al. (1989) argued that the curricula need to be addressed. Often the curricula do not include the multicultural backgrounds or contributions of minorities to the society as a whole, and the system is so rigid that the curricula cannot be modified to use cultural diversity as a positive teaching resource. In addition, the pedagogy is primarily based on a passive model of teaching and learning as opposed to interactive teaching-learning styles. Moreover, there is a

lack of guidance counselors at the elementary and high school levels with adequate training in diversity, including non-biased assessment. Finally, parents are often uninvolved in their students' assessment and program placement decisions, making it easier for their children to be placed in special education learning modalities.

While these issues might be experienced in the regular classroom setting as well, many of these researchers reported their findings on special education settings. Grossman (1998) reported that many of the factors mentioned previously contribute to some educators' continuing the process of treating students unfairly. He believed their mistreatment appeared to be rooted in bias and discrimination. Grossman opined that people seem to be programmed to discriminate against others who do not belong to their group, or who look, talk, think, or act differently from them. He felt much of the bias is unconscious, and teachers may not notice that they call on one group of children more often than they call on another. Sometimes when people become aware of the discrimination, they might justify and rationalize the behavior by attributing characteristics like aggressiveness, cultural inferiority, laziness, and linguistic inferiority to the students that are discriminated against (Simpson & Erickson, 1983; Taylor, 1979). While these teacher behaviors are not systemic within all classroom settings, the research findings tend to portray concern in this area.

When students are being considered for placement into special education services, there is a predetermined protocol for this procedure. The referral process for placing a child in special education is as follows: after pre-referral interventions are conducted by the regular-education teacher, he or she then makes a referral to the school psychologist for a psychological evaluation. The evaluation is followed by a multidisciplinary team assessment, and it is the qualification of this committee that determines the eligibility for special education placement (MacMillan &

Reschly, 1998). These researchers contend that discrimination can occur at virtually any step in this sequence. Other researchers found that when teachers and school psychologists refer students to special education programs, their evaluations of minority students and poor students might be biased (Argulewicz, 1983; Low & Clement, 1982). In a 1986 study, Collier found that teachers are more likely to refer poor and minority students for evaluation for possible placement in programs for students with handicaps and less likely to refer them to programs for the gifted and talented.

In a later study, Podell and Soodak (1993) found that among 240 regular-education teachers in the New York metropolitan area who had taught for at least one year, some teachers' decisions about low socioeconomic students were susceptible to bias when the teachers perceived themselves as ineffectual. These teachers considered regular education inappropriate for underachieving students from low socioeconomic families. On the other hand, teachers who considered themselves effective did not differentiate students by their socioeconomic status. In these researchers' study, teachers' referral actions thus appeared to be biased by variables that were not related to the specific academic difficulties of the student.

When selecting the most appropriate placement for students with academic problems, some educators and psychologists are more likely to choose a special education program for minority students and a regular education program for white, middle-class students (Grossman, 1998). When they choose a special education program for students, the multi-disciplinary teams are likely to select a special education program for minority and poor students identified as EMH but a learning disabilities program for white students. They also tend to recommend a more restrictive environment for minority and poor children than for white, middle-class pupils. Given that students with special needs benefit most when they are educated in the least restrictive

environment to the maximum extent appropriate, the data on educational settings raise serious questions about the quality of special education provided to minority students (Civil Rights Project, 2002).

Research has reached mixed conclusions regarding children who are labeled EMH. Some researchers found that when teachers work with EMH students, some teachers expect them to perform poorly in reading, writing, and math, while others found no differences in teacher behaviors towards those labeled students (Foster & Ysseldyke, 1976; Ysseldyke & Algozzine, 1990). Other research showed that in wealthier school districts, black children, especially males, were more likely to be labeled EMH (Civil Rights Project, 2002).

Overall, the research suggests that observed racial, ethnic, and gender disparities are the result of many complex and interacting factors. These factors include unconscious racial bias on the part of some school authorities, large resource inequalities (such as the lack of high quality teachers) that run along lines of race and class, unjustifiable reliance on IQ and other evaluation tools, some educators' inappropriate responses to the pressure of high-stakes testing, and power differentials between minority parents and school officials. The dramatic over-representation of black children labeled EMH compared to whites or other minorities is very pronounced. To the extent that minority students are misclassified, segregated, or inadequately served, special education can contribute to a denial of equality of opportunity, with few positive results within communities throughout the nation (Civil Rights Project, 2002).

Environmental and Socioeconomic Factors

In investigating the link between socioeconomic status (SES) and identification of EMH, several studies show that there is a definite association between this factor and EMH. For

example, in a 1994 study Herrnstein and Murray found that SES correlates positively to intellectual performance (Valencia & Suzuki, 2001). As one's SES increases, there is a tendency for one's intellectual performance to increase. Conversely, low SES tends to correlate with low intellectual performance. In an earlier 1973 study conducted by Nichols and Anderson, these researchers found that SES was largely responsible for the black–white differences in intellectual performance (Valencia & Suzuki, 2001).

While the term "environment" reflects the social and cultural influences on the individual, it also includes other more strictly biological influences such as the prenatal environment and nutritional factors early in life (Jensen, 1969). Socioeconomic status, on the other hand, was described by Slavin as a social construction describing human subgroups in a society. Typically, it is viewed as a measure of prestige within a social group frequently based on schooling attainment, income, and occupation (Valencia & Suzuki, 2001). Environmental deprivation and low SES have been shown to be empirically and persistently linked to EMH, which has no boundaries. It cuts across racial, ethnic, educational, social, and economic backgrounds (Artiles & Trent, 1994; Jensen, 1969; Yeargin-Allsopp et al., 1995).

Jensen (1969) referred to studies conducted by Skeels and Dye in 1939 and Davis in 1947 in which they found that children living in orphanages had very little sensory stimulation of any kind and little contact with adults. This extreme social isolation early in life led to great deficiencies in their IQ. However, when these children were removed from social deprivation and placed in good, social environments, they showed large gains in their IQ. The orphanage children gained in IQ from an average of 64 at 19 months of age to 96 at age 6 as a result of being placed in good homes and given social stimulus between 2 to 3 years of age. As adults, these subjects were performing satisfactorily, and their children's IQ averaged 105. These studies

highlight the fact that extreme environmental deprivation does not necessarily result in permanent, below-average intelligence.

Children in poor families may be identified as EMH because of malnutrition, disease-producing conditions, deleterious postnatal factors such as ambient lead or anemia, inadequate medical care, and environmental health hazards (Limon-Luckett, 1999; The Arc, 1998; Yeargin-Allsopp et al., 1995). Studies have shown that proper nutrition is critical to brain development. Severe undernourishment before 2 or 3 years of age, especially a lack of proteins, vitamins, and minerals essential for children's anabolism, results in lowered intelligence (Jensen, 1969). In 1963, Stoch and Smythe found that extremely malnourished South African black children tested about 20 points lower in IQ than children of similar parents who had not suffered from malnutrition (Jensen, 1969). If the nutrients are absent during critical periods of brain growth, development is permanently slowed (Monson, 2003). This relationship between nutrition and development is one of the reasons the school breakfast and lunch programs are crucial to poor children's academic success.

Children in disadvantaged areas may also be deprived of many common cultural and day-to-day experiences that other children receive. Such under-stimulation can result in slowing the growth of nerve cells or, worse, can cause irreversible damage and can serve as a cause for EMH (Monson, 2003; The Arc, 1998). Jensen (1969) mentioned that culturally disadvantaged children usually show a slight gain in IQ after their first few months of exposure to the environmental enrichment afforded by school attendance, but they soon lose this gain. A sizeable proportion of these children with initial gains in IQ tend to show a gradual decline in IQ throughout the subsequent years of school. Jensen posited that as children got older, their IQ increasingly resembled their parents' rank order in intelligence.

Garber's 1998 research findings indicated that most parents with EMH also have low income (Feldman & Walton-Allen, 1997). Individuals with EMH are more likely to live in poverty, including having poorer housing conditions and higher exposure to high crime areas in which they are particularly vulnerable. In 1994, Newman reported that persons with EMH have worse housing and neighborhood conditions than do those who do not have handicaps (Robinson & Rathbone, 1999). Additionally, according to Cornelius' 1993 research, individuals living in poverty are less likely to be insured, are less likely to have access to a full range of quality services in the community, and are less likely to benefit from existing services than are individuals who have better financial resources (Robinson & Rathbone, 1999).

Newman (1995) stated that federal researchers found that children in Washington, D.C., born to poor black women and to uneducated mothers of all races are more likely than others to be identified as EMH. Mothers who are high-school dropouts are four times more likely to have EMH children than mothers who are not high-school dropouts. The researchers concluded that in comparison to white children, black children are more than twice as likely to be identified as EMH.

According to research reported by Graves, Freeman, and Thompson in 1968, other disadvantageous factors most highly associated with poor social conditions include pregnancies at an early age, teenage deliveries, pregnancies in close succession, large number of pregnancies, and pregnancies that occur late into the woman's reproductive life (Jensen, 1969). These conditions are related to low birth weight, prematurity, increased infant mortality, prolonged labor, toxemia, anemia, malformations, and mental deficiency in the offspring. All of these factors have high incidence rates in low socioeconomic groups and in certain racial groups such as blacks, American Indians, and Mexican Americans, and probably account for some proportion

of the group differences in IQ and scholastic performance (Jensen, 1969). The poverty rate for black families in the United States is about three times that of the rate for all families. This situation places black children at greater risk of poor school performance (Oswald et al., 1999).

Socioeconomic factors, especially poverty, have therefore been closely linked to the over-representation of black students in certain categories of handicap, including EMH (Oswald et al., 1999). These researchers found that as poverty increased, more black students were identified as EMH. Thus, EMH appears to be linked to environmental deprivation and unequal distribution of wealth, and lack of power and opportunity (Weiner & Davis, 1995). Jorge Amselle, a spokesman for the Center for Equal Opportunity, a Washington-based group, stated that more minorities are in special education, not so much because of prejudice and bias, but more so because they are poorer. He felt it is "more a matter of apathy than racial discrimination" (Fine, 2001). Mercer's 1965 study posited that EMH children were really the consequence of children in poverty not being able to succeed in school. Outside of school, many of these children so labeled were able to care for siblings, wash their clothes, do errands and take leadership positions within their peer groups. Mercer called these children "six-hour mentally retarded" because they were deemed EMH in school (Weiner & Davis, 1995).

Similarly, children who live in rural communities face daunting challenges in achieving academic success. A report in 1992 indicated that 22.9% of rural children live in poverty compared to 20% of non-rural children and 20.6% of all American children (Sherman, 1992). This author also revealed that 41% of poor, rural children live in extreme poverty; that is, their family income is below 50% of the federal poverty threshold. These children are also more likely than non-rural children to live in poverty for a much longer time. In lower-income, rural communities, expectations for student achievement varied according to the level of poverty and

population sparsity. Capper (1990) found that the lower the income level and the more rural the community, the lower the expectations teachers had for students.

Children who live in rural communities also tend to score significantly lower on psycho-educational tests than their urban and suburban peers. Hilton (1991) conducted a study among children from middle-class rural farm homes, and middle-class suburban metropolitan homes. He found that a significantly higher proportion of the rural children failed a wide range of the verbal ability and auditory comprehension items. Rural children were reported to feel ill at ease in the strange testing environment, were quieter, would not venture to guess as often as their suburban peers, and were less willing to interact with the unfamiliar adult examiners. Hilton argued that the culturally biased nature of standardized tests might have led to low test scores among these students, whose rural life experiences negatively affected their performance. The characteristics of rural communities therefore place tremendous pressure on students to succeed in their environment. Approximately 312,000 (12.5%) students lived in rural Florida in 2001–2002 and could have been affected by these trends.

Psychological Testing, Assessment, Classification, and Placement

The understanding of the term “intelligence” has sparked many definitions and theories. Valencia and Suzuki (2001) briefly discussed several definitions for intelligence. In 1927, Spearman viewed intelligence as the “g factor” or general intelligence with verbal ability and fluency. Several researchers, including Jensen, support this definition. Thurstone, in 1941, challenged the g factor and instead defined intelligence as seven primary mental abilities that included verbal comprehension, word fluency, number facility, spatial visualization, reasoning, perceptual speed, and memory. In 1950, Vernon defined intelligence as A, B, and C. According

to Vernon, intelligence A represents innate capacities of the individual that are primarily genetically determined. Intelligence B represents behavior that society recognizes as being intelligent and that might be more closely linked to behaviors that are culturally reinforced. Intelligence C includes those cognitive abilities that are measured by traditional intelligence tests. Cattell, in 1963, suggested that intelligence could be divided into two parts: crystallized and fluid abilities. Crystallized intelligence involves established cognitive functions related to achievement that are influenced by formal and informal education. Fluid intelligence is the capacity required for problem solving. In 1983, Gardner argued for the idea of multiple intelligence, including interpersonal, intrapersonal, linguistic, logical-mathematical, bodily kinesthetic, musical, and spatial. Sternberg, in 1996 cited the importance of creative and practical areas of intelligence not commonly evaluated in traditional measures. In 1997, Coles linked intelligence to morals and coined the term "moral intelligence," noting that people grow morally as a consequence of learning how to deal with others and how to behave in the world (Valencia & Suzuki, 2001).

School personnel believe intelligence is related to how much students profit from schooling. They believe that students who have more intelligence will profit more from instruction than will students who have less intelligence. Much of the intelligence measured in the school setting tend to reflect Spearman's general intelligence, Thurstone's primary abilities, and Cattell's crystallized and fluid abilities. The intelligence tests tend to measure how much intelligence a student has, based on the premise and theories of the tests' developers. The results from these psychological tests help to classify students and determine if special education services are needed (Ysseldyke & Algozzine, 1990).

Testing, classification, and placement into EMH are unavoidable. They are also major activities in America's schools. Testing refers to sampling of behaviors in students to obtain quantitative scores of relative standings. Assessment is the process of collecting data to make decisions about students. Classification is the process through which the collective interpretation of the data has been formalized. Placement refers to a multi-disciplinary decision concerning the student based on the results of the testing, assessment, and classification (Ysseldyke & Algozzine, 1990).

The U.S. Congress requires nondiscriminatory assessment procedures. First, the requirements of the mandate state that tests should be conducted in the child's native language or other appropriate mode of communication. Second, the test and evaluation materials should show areas of academic need rather than just IQ. Third, the test should demonstrate the child's aptitude and not the child's deficits. Fourth, different procedures should be used to determine an appropriate program. Fifth, a multidisciplinary team should participate in the assessment. Finally, the child should be assessed in all aspects of the handicap in question (de la Cruz, 1996).

One of the main tools used to assess students is the intelligence test. The intelligence test yields numerical scores (IQ). The IQ is assumed to be normally distributed in the population; that is, the distribution of IQs conforms to the normal or the familiar "bell-shaped curve." The IQ, which is now the universal "unit" in the measurement of intelligence, was originally defined as the ratio of the individual's mental age to his or her chronological age. Mental age was simply the typical or average score obtained on a test by children of a given age, and therefore the average child had an IQ of 100. Since there were difficulties with the mental age concept, modern test constructors no longer measure mental age but rather convert raw scores into IQ for

each chronological age group. The average IQ is arbitrarily set at 100 and is defined as a normally distributed variable with a mean of 100 and a standard deviation of 15 (Jensen, 1969).

Once the referral process begins and the psychoeducational assessment is completed, the multidisciplinary team meets to determine eligibility for placing a child in EMH. The results of the psychological test tend to have great input in the decision of the student's placement (MacMillan & Reschly, 1998). Students are considered EMH when their IQ score is in the range of 55 to 69. The upper limit can be extended to 75 or more, depending on the reliability of the IQ test used (Grossman, 1983). Adaptive behaviors must also be considered. A student with an IQ score higher than 70 may be classified as EMH because of deficient adaptive behaviors (Hunt & Marshall, 1994). This IQ-achievement discrepancy formula is perhaps the most common placement procedure in the U.S. This formula is used in 37 (74%) of the states' school systems (Payette & Clarizio, 1994). The current cut-off IQ score of less than 70 is a figure that has evolved over time.

In 1959 the American Association on Mental Disabilities (AAMD) set the IQ threshold for EMH at less than 85. In the mid- to late-1960s, classes for EMH students were populated very heavily by minority students who were from poor families. Professionals, parents, and advocacy groups expressed concern about over-representation of these students in these EMH classes. In addition, the label of EMH was thought to stigmatize students and limit their future educational and employment opportunities (Ysseldyke & Algozzine, 1990). The civil rights movement of the 1960s forced psychologists to rethink this boundary, because half the black population fell below it (La Griffe du Lion, 2000).

In 1973 the AAMD (by then the American Association on Mental Retardation - AAMR) changed the threshold for EMH from an IQ of less than 85 to an IQ of less than 70 along with

deficits in adaptive behavior. The proportion of black students below this threshold instantly dropped from about 50% to 12%. Tucker's 1980 investigation found that these changes occurred only due to social and political pressure mounted on behalf of students labeled with this diagnosis (Ysseldyke & Algozzine, 1990). The change in the IQ criterion resulted in removing a large number of black students from this label. Many of these students were no longer eligible for EMH services. While some met with academic challenges in their mainstream classrooms, others were more successful. Several were reclassified with other learning disabilities and provided with the appropriate services.

Evaluation instruments such as the intelligence test are written in Standard English. When used with black students, these protocols appear to give negative and poor results to them. The vast majority of research shows that nonstandard, dialect-speaking students who are poor, black, Native American, Hispanic American, or from the Appalachian areas, perform poorly when they are assessed in Standard English. Many consider this issue to be "test bias" (Bliss & Allen, 1981; Bryen, 1976; Burke, Pflaum, & Knafle, 1982; Harber, 1980; Ross, 1979; Thurmond, 1977; Wartella & Williams, 1982).

The preponderance of literature points to test bias as one of the major contributors to the over-representation problem of black students in EMH classes (Bailey & Harbin, 1980; Greenwood, Preston, & Harris, 1982; Oakland, 1977). The concern with bias stems from the ways in which the American society evaluates the worth of individuals. Ysseldyke and Algozzine (1990) proffered three reasons for the concern over bias in assessment. First, they believe that people are evaluated based on their presumed intelligence and since the IQ has become a very potent yardstick, educators have become increasingly concerned when a student's achievement is not commensurate. Second, different racial groups achieve different average

scores on intelligence test and the professionals are at a loss to explain the reasons for the observed differences. Finally, there is a disproportionate representation of black students in EMH classes, which is a concern in litigation as well as legislation.

Discussions about test bias are therefore often accompanied by much debate that frequently expresses strong disapproval of using psychological tests with any minority group, since these groups have not been exposed to the cultural and environmental circumstances and the values of the so-called white middle class (Reynolds, Lowe, & Saenz, 1999). The process by which items are selected for inclusion in standardized tests, the standardization sample used in norming measures, and the test validation processes are major concerns to minority groups (Greenwood et al., 1982; Ysseldyke & Algozzine, 1990). IQ tests rely heavily on the values of white, middle-class culture and thus discriminate against people from differing racial backgrounds (Maheady, Towne, Algozzine, Mercer, & Ysseldyke, 1983).

In 1978 Mercer and Lewis performed a review of early studies dealing with psychological evaluations of black children and concluded that their potential as students had been systemically shrouded by bigotry, aloofness, and insensitivity (Swanson & Watson, 1989). The Stanford-Binet test, for example, is widely used as a psychological IQ test for students. However, it exposed inaccuracies and biases based on cultural and racial factors from as early as 1910 (Blanton, 1975). Blanton called for the development of special population norms to correct for these problems but without much success.

Another early study compared white, Indian, and Mexican children with regard to their intelligence. This study indicated differences between the races that reflect differences in mental attitude toward the white person's way of thinking and living (Garth, 1923). Researchers found that many problems developed because educators were often administering English language test

to students who did not speak English, and tests were often normed on a population of white middle-class students (Bersoff, 1982; Reschly, Kicklighter, & McKee, 1988).

Other critics have argued that tests are biased against blacks because the unequal treatment they have received from society is not taken into consideration. In 1981, for example, Gordon and Terrel reported that the abilities of this group are not accurately assessed when using psychological tests that are norm referenced on the values and cultures of the white, middle class (de la Cruz, 1996).

Some researchers continue to press for the use of intelligence tests but suggest that they should be administered differently. For example, Jensen (1969) suggested that examiners testing children from a different race or from a poor background should take time to be better acquainted with the students and even perform two tests with them. The first should be considered a practice test and the second would be the real test. He argued that little confidence should be placed in a single test score of disadvantaged children.

Other investigators also added that less emphasis should be placed on IQ scores generated from psychological tests. Miller-Jones (1989), for example, stated that continued dependence on IQ scores for diagnosis of mental handicaps should be further examined. Instead, this researcher advocated the use of other criteria, such as adaptive behavior, in addition to the intelligence level. Multiple indicators to assess intelligence across racial groups should be used because of certain individual differences such as in communication, reasoning, cognitive, and learning styles, are greatly shaped by culture.

Gardner (1999) concurred with Miller-Jones by reiterating that the IQ score measuring only the linguistic and logical-mathematical intelligences are insufficient in assessing human cognitive abilities. He emphasized that while assessment is necessary and important, it should

encompass multiple measures. He further stated that all assessments and resulting interventions should be sensitive to individual differences and developmental levels. He also advocated that the assessment's primary goal should be to aid students instead of classifying or ranking them (Gardner, 1993).

Measures of Intelligence

The discussion on the major intelligence tests in this section helps to shed some light on protocols that show promise among black students, which may possibly help to reduce the disproportionality of black students in EMH. Other tests may be less effective with this group of students because the tests may be more culturally loaded. Intelligence tests can be grouped in several ways. The discussion will focus first on the major, traditional intelligence tests and then on some less well-known tests. Finally, the discussion will examine recently developed, nonverbal protocols that seem to be less culturally loaded and may be more suitable for evaluating black and Hispanic children.

The most commonly used protocols for the identification of EMH are the Wechsler Scales of Intelligence, the Stanford-Binet Intelligence Scale Fourth Edition (SB: FE), the Kaufman Assessment Battery for Children (K-ABC) Mental Processing Scales, the Kaufman Adolescent and Adult Intelligence Test (KAIT), the Kaufman Brief Intelligence Test (KBIT), the Cognitive Assessment System (CAS), the Woodcock-Johnson Psycho-Educational Battery-Revised: Tests of Cognitive Ability (WJ-R), and the Differential Abilities Scales (DAS) (Cheboygan-Otsego-Presque Isle Educational Service District, n.d.; Kaufman, Lichtenberger, & Naglieri, 1999; Pierangelo & Giuliani, 1998). Obringer's 1987 national survey of school

psychologists showed that the Wechsler scales were the most frequently used, followed closely by the K-ABC and then the Stanford Binet tests (Kaufman et al., 1999).

Other less well-known testing instruments include the Columbia Mental Maturity Scale (CMMS), the McCarthy Scales of Children's Abilities (MSCA), the Slosson Intelligence Test – Revised (SIT-R), the Comprehensive Test of Nonverbal Intelligence (CTONI), the Test of Nonverbal Intelligence-Third Edition (TONI-3), the Otis-Lennon School Ability Test (OLSAT), and the Universal Nonverbal Intelligence Test (UNIT) (Pierangelo & Giuliani, 1998; Riverside Resource Bulletin, 2003).

Wechsler Scales of Intelligence

Wechsler (1974) defines intelligence as "the overall capacity of an individual to understand and cope with the world around him" (p. 5). These scales comprise three separate tests that measure a variety of intellectual areas and compute a Verbal, Performance, and Full Scale IQ (Kaufman et al., 1999). The verbal areas measure auditory/vocal tasks, while the performance areas assess visual/vocal and visual/motor tasks. The three tests include the Wechsler Preschool and Primary Scale of Intelligence (WPPSI-R) for ages 4½ to 6½; the Wechsler Intelligence Scale for Children – III (WISC-III) for ages 6½ to16½; and the Wechsler Adult Intelligence Scale – (WAIS-III) for ages 16 and over. These scales are standardized, individualized, norm-referenced tests that take approximately 60 to 75 minutes for a psychologist to administer to an individual (Pierangelo & Giuliani, 1998). Based on the results of the Wechsler Scale, a person would be deemed EMH if: the Verbal, Performance, and Full Scale IQ score fell within the mentally deficient range (69 and below); there is no indication of greater potential; the student also had a low score on a measure of Adaptive Behavior; and there is a

history of academic performance that is commensurate with low intellectual ability (Pierangelo & Giuliani, 1998). These authors contend that the strengths of the Wechsler Scales include the following:

1. Strong evidence of the test's reliability and validity
2. Thorough interpretation in the manual of information regarding interpretation of scales score differences
3. High correlation between scores on the tests and academic achievement
4. Valuable information as one of the measures in the diagnosis of learning disabilities
5. Strong organization and ease of use
6. Strong objective and projective potential.

Weaknesses of the scales include the fact that some of the test questions exhibit cultural bias; the tests do not allow for the distinction of full-scale IQs below 40, making them less than useful than other tests in distinguishing among levels of handicap; and the tests cannot be used alone in the diagnosis of EMH (Pierangelo & Giuliani, 1998).

Stanford-Binet Intelligence Scale Fourth Edition (SB: FE)

First developed by Binet in 1905 and revised by Terman at Stanford University to become the Stanford-Binet test, this was the first test to compute a true IQ. The SB:FE helps to differentiate between EMH children and those who have a specific learning disability. Now in its fourth edition, it is generally regarded as the standard for the measurement of intelligence (Jensen, 1969; Niolon, 2002). It also helps teachers and psychologists understand why a particular child is having trouble learning in school (Pierangelo & Giuliani, 1998). The test helps in the study of the development of cognitive skills in individuals from ages 2 to adulthood,

although it is generally used with younger children and with intellectually limited youngsters. The Stanford-Binet requires approximately 45 to 90 minutes to administer on an individual basis and is used to ascertain a measure of global or general intelligence by producing an IQ score. The battery comprises 15 tests divided into four areas: verbal reasoning, quantitative reasoning, abstract/visual reasoning, and short-term memory. An IQ score between 50 and 67, inclusive, rates the individual as EMH.

The strengths of the test include rating scales on the cover of the test booklet for ease and convenience and an "adaptive-testing" format that prevents excessive frustration or boredom for the very dull, or the very bright, child. Its weaknesses are that the norming samples for some tests at some age levels are inadequate; "time limits" are suggested, but the examiner may have to rely on clinical judgment regarding enforcement of the limits; some of the subtests have a ceiling that is much too low for older or very smart individuals; and it is not a particularly valuable test for children with developmental delays (Pierangelo & Giuliani, 1998).

Kaufman Assessment Battery for Children (K-ABC): Mental Processing Scales

The purpose of the K-ABC is to measure intelligence and achievement. Developed in 1983, the K-ABC attempts to minimize the influence of language and acquired facts and skills on the measurement of a child's intellectual ability. It is predicated on the distinction between problem solving and knowledge of facts. The former set of skills is interpreted as intelligence; the latter is defined as achievement. This definition distinguishes the K-ABC from other intelligence tests in that a person's acquired factual information and applied skills greatly influence the obtained IQ. A standardized measure, it is individually administered to students ranging in age from 2½ to 12½ and is usually completed within 35 to 85 minutes, depending on

the age of the student. The K-ABC contains 10 subtests divided into two major areas: the sequential processing scale and the simultaneous processing scale. A standard score of 69 and below is considered to be "lower extreme" intelligence and achievement (Kaufman et al., 1999).

Strengths of the K-ABC include its excellent norming sample; the excellent reliability and validity of its data; the provision of substantial data profiles of various groups of exceptional children, profile differences related to gender, socioeconomic status, and racial group membership; and the provision of suggestions for educational programming. The non-verbal scale, in particular, significantly contributes to the effort to address the diverse needs of minority groups and language-handicapped children (Kaufman et al., 1999).

On the other hand, the K-ABC should not be used in the intellectual diagnosis of EMH in the preschool years because low scores at this age are very difficult to obtain. Since the test also relies heavily on short-term memory, the scores of children with attention and short-term recall difficulties may be skewed (Pierangelo & Giuliani, 1998).

Kaufman Adolescent and Adult Intelligence Test (KAIT)

The KAIT is an individually administered test for people between the ages of 11 and 85 and over. It yields three standard IQ scores: the Fluid, Crystallized, and Composite, each with a mean of 100 and a standard deviation of 15. Fluid intelligence measures "a person's adaptability and flexibility when faced with new problems, using both verbal and nonverbal stimuli" (Kaufman & Kaufman, 1993, p. 7). In other words, "fluid" intelligence is the capacity for new conceptual learning and problem solving, relatively independently of education and experience, which can be invested in the particular learning opportunities that the individual wishes to pursue in accordance with his or her motivations and interests (Jensen, 1969). Crystallized intelligence,

on the other hand, measures the acquisition of facts and problem -solving ability using stimuli that are dependent on formal schooling, cultural experiences, and verbal conceptual development (Jensen, 1969; Kaufman et al., 1999).

Results from three fluid and three crystallized subtests are used to compute the IQ. This test is standardized, very reliable, and valid. Based upon Piaget's developmental theories and Luria's neuropsychological models, it is theoretically sound. The test materials are well constructed, attractive, and stimulating to examinees; and the manual is well organized and helpful. One of the weaknesses of the KAIT is that it can be difficult for borderline individuals and for some older people who may be affected with poor eyesight, poor hearing, or poor memory (Kaufman et al., 1999).

The Kaufman Brief Intelligence Test (KBIT)

The KBIT is intended as a brief measure of verbal and nonverbal intelligence, and it is especially valuable as an assessment device for developing and evaluating remedial programs for EMH students. It takes about 15 to 30 minutes to administer and may be given to persons ranging in age from 4 to 90. Consisting of two subtests, vocabulary and matrices, it provides percentiles, standard scores, and an IQ composite. This test is a good, quick screening measure of intelligence that is simple and easy to score, yet still yields a psychometrically sound measure of verbal, nonverbal, and composite intelligence. Nevertheless, its manual lacks clarity and organization, and further validation studies are needed (Pierangelo & Giuliani, 1998).

Cognitive Assessment System (CAS)

The CAS is based on the planning, attention, simultaneous, and successive (PASS) theory of intelligence. According to this theory, the human cognition includes four components. "Planning" processes provide cognitive control, utilization of processes and knowledge, intentionality, and self-regulation to achieve a desired goal. "Attentional" processes provide focused, selective, cognitive activity over time. "Simultaneous" and "successive" processes are the two forms of operating on information. The CAS yields standardized scores for these four subtests, with an additional Full Scales score with a mean of 100 and a standard deviation of 15. The CAS has high reliability and validity estimates. This test's fairness was demonstrated by a series of studies of the prediction of achievement for whites, blacks, Hispanics, non-Hispanics, males, and females (Kaufman et al., 1999).

Naglieri and Rojahn (2001) conducted a study of 78 white and 78 black students who were all placed in special education programs for EMH students. Their findings revealed that the WISC-III Full-scale IQ scores were significantly lower than the CAS Full Scale scores. The WISC-III thereby identified more children as EMH than the CAS (83.3% to 57.7%). The WISC-III also classified more black students than white students as having EMH as compared to the CAS (WISC-III: 88.9% vs. 75.8%, CAS: 53.3% vs. 63.6%, respectively). These researchers concluded that the problem of over-representation of black children in EMH programs might be addressed if the CAS were used instead of the WISC-III.

Woodcock-Johnson Psycho-Educational Battery-Revised: Tests of Cognitive Ability (WJ-R)

The WJ-R is one of the most comprehensive test batteries for the clinical assessment of children and adolescents. It is administered to persons from age 2 to 90 and above and comprises

two sections: cognitive and achievement. The cognitive section comprises 21 subtests, seven of which make up the Standard Battery (long-term retrieval, short-term memory, processing speed, auditory processing, visual processing, comprehension-knowledge, and fluid reasoning). The remaining 14 make up the supplemental battery. The cognitive test yields two composite scores: the Broad Cognitive Ability and the Early Developmental (for preschoolers), and both are comparable to an overall IQ score. Computer software is essential for scoring this test. It is also a very lengthy test. It could take a minimum of 40 minutes just to complete the Standard Battery and up to a maximum of 5 hours to complete both the cognitive and the achievement sections (Kaufman et al., 1999).

However, the standardization of the test appears to be sound, and the various age groups are adequately represented. Nonetheless, some researchers (McGrew, Werder, & Woodcock, 1991) critiqued its standardization procedures. These authors mentioned that paraprofessionals and substitute teachers collected the original data, not psychologists. In addition, students with handicaps were not included in the standardization sample but were only included if they happened to attend the regular classes that were been sampled. Nevertheless, the cognitive test can provide the psychologist with a wealth of information about a student's intellectual functioning and abilities. The test materials and manuals are user friendly and well designed (Kaufman et al., 1999).

Differential Abilities Scales (DAS)

DAS is a relatively new test developed by Elliot in 1990 (Kaufman et al., 1999). It is individually administered to persons ranging in age from 2½ to 17. It has a combined total of 17 cognitive and achievement subtests. The cognitive section has a preschool level and a school-age

level. Although the developer of this test views it as “eclectic,” McGhee’s 1993 findings showed that it has its theoretical underpinnings in the “g” view of intelligence. The cognitive portion of the DAS consists of “core” and “diagnostic” subtests. The “core” measures complex processing and conceptual ability, while the “diagnostic” measures short-term memory and processing speed. The scores of the core subtests are averaged to produce the General Conceptual Ability (GCA) score, where the mean is 100 and the standard deviation is 15. Score information allows the psychologist to ascertain information about aptitude–achievement discrepancies. Elliot standardized this test on 3,475 children between 1987 and 1989. Over and beyond this number, he added 600 cases of black and Hispanic children to analyze for item and prediction bias. There is no evidence that the DAS is biased against blacks or Hispanics. This test is viewed as one of the least biased tests available today. It also appears to be relatively culture fair. However, there are issues with the way it is administered to children who are not proficient in English. It has poor instructions for this group and for those who are hearing impaired (Kaufman et al., 1999). The descriptions of protocols listed below are for less well-known or newer psychological tests that are used for assessing cognitive and achievement abilities.

Columbia Mental Maturity Scale (CMMS)

CMMS is intended to measure the intelligence of children suspected of being EMH by using a pictorial type of classification. It is an individual type scale, with 92 items of general reasoning abilities that require perceptual discrimination involving color, shape, size, use, number, kind, missing parts, and symbolic material. The student responds by selecting the picture in each series that is different from, or unrelated to, the others. Administration time is about 15 to 30 minutes and may be given to 3½-year-olds to 10-year-olds. The test mean is 100

and standard deviation is 16. The measured IQ range is from 50 to 150. Most children enjoy taking this easy-to-administer test that can generate quality judgments of the child and his or her method of attacking problems. However, the manuals need to be updated. The test has been standardized on a non-disabled population only and little has been determined about the test's possible educational or clinical value (Pierangelo & Giuliani, 1998).

McCarthy Scales of Children's Abilities (MSCA)

This test seeks to determine general intellectual level as well as strengths and weaknesses in important abilities for children ranging in age from 2 years and 4 months to 8 years and 7 months (Pierangelo & Giuliani, 1998). It consists of 18 separate tests that are grouped into six scales: verbal, perceptual-performance, quantitative, composite (general cognitive), memory, and motor. The general cognitive raw score is converted into a standard score with a mean of 100 and a standard deviation of 16. This score is called the General Cognitive Index and is equivalent to an IQ score. The strengths of the MSCA include the following: it creates a framework within which the child being tested can function comfortably; it is game-like with non-threatening material; and it appears to be reliable and valid, thus making it a good determinant of achievement for children in school (Pierangelo & Giuliani, 1998).

Its weaknesses are as follows: it excludes exceptional children from the standardization sample; it lacks social comprehension and judgment tasks; it may not be appropriate for older or gifted children because of a low ceiling level; and it may take a long time to administer and interpret, thus requiring a lengthy scoring procedure that may be problematic for new users (Pierangelo & Giuliani, 1998).

Slosson Intelligence Test- Revised (SIT-R)

The SIT-R is designed to provide a quick screening measure of verbal intelligence. It measures six different categories with 187 oral questions that are arranged in order of difficulty. No reading or writing is required. The SIT-R may be administered to persons aged 4 to 65. The test has excellent reliability, can be administered and scored quickly, and can provide useful information about probable level of mental ability. However, it is of limited use for young children with language difficulties, it does not contain any performance tasks, and visual spatial difficulties may be problematic to assess with the test (Pierangelo & Giuliani, 1998).

Otis-Lennon School Ability Test (OLSAT)

This test seeks to measure abstract thinking and reasoning ability. It consists of seven different levels covering ages 5 to 18. Twenty-one different types of subtests are organized into five clusters, and an equal number of verbal and non-verbal items is included at each level. The psychologist, special education teacher, or classroom teacher may administer it in a group format. The administration for students in grades K to 2 is 75 minutes over two sessions and for grades 3 to 12, 60 minutes. The five clusters of testing are verbal comprehension, verbal reasoning, pictorial reasoning, figural reasoning, and quantitative reasoning. The test is hand or machine scorable and yields percentile rank, stanine, scaled scores, and NCEs by age and by grade. The test is standardized on a large representative sample of the school population within the U.S. and provides a variety of derived scores for separate age and grade groups. Nevertheless, there are some concerns about the validity of the test, and examiners are cautioned about using the upper three levels with students who are poor readers or are easily distractible (Pierangelo & Giuliani, 1998).

Comprehensive Test of Nonverbal Intelligence (CTONI)

The CTONI is designed to measure the nonverbal intelligence of students who are bilingual, speak a language other than English, or are socially/economically disadvantaged, deaf, language disordered, motor impaired, or neurologically impaired. This test may be individually administered to children ages 6 to 18 years and normally requires approximately 60 minutes for testing. There are six subtests arranged according to three ability areas: analogical reasoning, categorical classification, and sequential reasoning. The test provides standard scores, percentiles, age equivalents, and three composite scores: a nonverbal intelligence quotient, a pictorial nonverbal intelligence quotient, and a geometric nonverbal intelligence quotient (Pierangelo & Giuliani, 1998). The CTONI is designed and documented to be unbiased with regard to gender, race, and handicap. The directions can be administered orally or through simple pantomime, and the test can be administered in less than 60 minutes. However, given the newness of the test, further study is required to determine the limitations, if any, of its validity and reliability.

Test of Nonverbal Intelligence – Third Edition (TONI-3)

Like the CTONI, this test also measures the nonverbal intelligence of students who are bilingual, speak a language other than English, or are socially/economically disadvantaged, deaf, language disordered, motor impaired, or neurologically impaired. The TONI-3 is a major revision of the popular and well-designed Test of Nonverbal Intelligence. There are 50 items that measure intelligence, aptitude, abstract reasoning, and problem solving that are completely free of the use of language. The test requires no reading, writing, speaking, or listening skills on the part of the student. It is norm-referenced, can be administered in about 15 to 20 minutes, and is

applicable to people from age 5 to 85. The test is quick to score, easy to administer, requires responses that are motor reduced, and is particularly well suited for individuals with multiple handicaps. However, because of its relative newness, further study is required to determine the limitation, if any, of its validity and reliability (Pierangelo & Giuliani, 1998).

Universal Nonverbal Intelligence Test (UNIT)

The UNIT is a set of individually administered specialized tasks. These tasks are designed to measure fairly the general intelligence and cognitive abilities of children and adolescents from ages 5 to 17 who may be disadvantaged by traditional verbal and language-loaded measures. The administration and response are entirely nonverbal. It measures a broad range of complex memory and reasoning abilities. It contains six subtests: symbolic memory, spatial memory, object memory, cube design, analogic reasoning, and mazes. The memory subtests measure recall of content, location, and sequence. The reasoning subtests measure pattern processing, problem solving, understanding of relationships, and planning abilities. Each of the subtests yields an age-appropriate, scaled score with a mean of 10, and a standard deviation of 3. The UNIT then provides five scales with a standard score with a mean of 100 and a standard deviation of 15 for each of the five scales. These five scales are memory quotient, reasoning quotient, symbolic quotient, nonsymbolic quotient, and full-scale intelligence quotient.

The UNIT is intended to provide a fair assessment of intelligence for children who have speech, language, or hearing impairment; color-vision deficiencies; different cultural or language backgrounds; and those who are verbally uncommunicative. It is a standardized, norm-referenced measure that was standardized in a stratified random sampling plan that closely

matched the U.S. population according to the 1995 census data. Technical analyses provide evidence that the UNIT's reliability, validity, and test properties are sound for the different types of children that it evaluates (Bracken & McCallum, 1998; Riverside Resource Bulletin, 2003).

Legislation and Court Cases

Legislation and court rulings set regulations and precedence in the treatment of over-representation of blacks in special education, including EMH. This section reviews the most recent amendments to IDEA 1997 as they relate to disproportionate representation of blacks in EMH and court rulings that are relevant to over-representation of blacks in EMH.

IDEA and many associated judicial decisions require districts to implement nondiscriminatory procedures that ensure that children with handicaps, rather than racial differences, are appropriately identified. IDEA expanded congressional intent to be more responsive to the growing needs of an increasingly more diverse society (Oswald et al., 1999). This law reads as follows:

> 300.755 Disproportionality
>
> (a) General. Each State that receives assistance under Part B of the Act, and the Secretary of the Interior, shall provide for the collection and examination of data to determine if significant disproportionality based on race is occurring in the State or in the schools operated by the Secretary of the Interior with respect to -
>
> > (1) The identification of children as children with disabilities, including the identification of children as children with disabilities in accordance with a particular impairment described in section 602 (3) of the Act; and
> >
> > (2) The placement in particular educational settings of these children.
>
> (b) Review and Revision of Policies, Practices, and Procedures. In the case of a determination of significant disproportionality with respect to the identification of children with disabilities, or the placement in particular educational settings of these children, in accordance with paragraph (a) of this section, the State or the Secretary of the Interior shall provide 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 Part B of the Act (Authority:20 U.S.C. 1418(c)).

Whether or not this law can be enforced becomes a matter of debate. However some court cases that preceded this amendment have helped to resolve the issue of over-representation of blacks in EMH in some states.

A number of court and monitoring actions have challenged and attempted to influence the evaluation and placement of black students and other minority students into special education (Oswald et. al. 1999). Court cases concerning disproportionate placement of black and Hispanic students first appeared around 1970. These cases centered on challenges to the use of individually administered IQ tests, special education programming, and other aspects of psychological services. Typical facts in these cases included the over-representation of black students in special education programs usually with a diagnosis of EMH and placement into self-contained classes (Reynolds & Gutkin, 1999).

Well-known cases include *Diana v. California State Board of Education* (1970), *Guadalupe Organization v. Tempe Elementary School District No. 3* (1972), and *Larry P. v. Riles* (1972). *Diana* was a class-action suit filed on behalf of nine Mexican American students in the Monterey County Schools of California. At the time, 18.5% of the total student enrollment in the school district was Hispanic, but 33.3% of the EMH enrollment was Hispanic. Similar issues existed in the *Guadalupe* case, a class-action case filed on behalf of Hispanic and Native American students. The plaintiffs claimed that over-representation violated the equal protection principle, the civil rights statutes, and due process rights. The view of these plaintiffs was that students were being denied educational opportunities based on some inherent characteristic (race or ethnicity) that was invalid (Reschly & Bersoff, 1999).

Both *Diana* and *Guadalupe* were settled by consent decrees; that is, the court approved a settlement negotiated between the parties. The consent decrees centered on the kind of IQ tests used with minority students who had limited English proficiency (LEP) or the manner in which the test was administered (in the student's primary language) (Reschly & Bersoff, 1999). The California Department of Education agreed to do the following as per the *Diana* case: (a) test bilingual children in both English and their primary language; (b) remove unfair verbal items from tests; (c) re-evaluate all Mexican American and Chinese students enrolled in classes for individuals with EMH, use nonverbal items, and test them in their native language; and (d) make IQ tests that incorporate Mexican American culture and are standardized only on a Mexican American population (Swanson & Watson, 1989; Ysseldyke & Algozzine, 1990). The *Diana* and *Guadalupe* consent decrees are also important in the evolution of the legal rights of parents and issues of nondiscrimination in assessment, classification, and placement. The IDEA incorporated verbatim much of the language of the *Diana* and *Guadalupe* consent decrees (Reschly & Bersoff, 1999).

The *Larry P. v. Riles* was a class-action case filed on behalf of black elementary students in the San Francisco Public Schools who allegedly were inappropriately placed in classes for EMH students. The major facts included over-representation data, showing that although black children constituted 28.5% of the district's overall enrollment, 66.6% of the pupils in EMH were blacks (Reschly & Bersoff, 1999). In the court settlement, California was ordered to stop using any standardized intelligence tests such as the Wechsler Intelligence Scale for Children or the Stanford-Binet, unless they were proved to be free of racial or cultural bias. In addition, all tests were to be conducted in a non-discriminatory way. Comparative black and white students' data on referrals and placement decisions were to be maintained. Disproportionate placements were to

be monitored and eliminated. Finally, all black students were to be evaluated without using standardized intelligence/ability tests (de la Cruz, 1996; Swanson & Watson, 1989; Ysseldyke & Algozzine, 1990). In the *Larry P* case, Judge Peckham concluded his opinion with the following:

> Whatever the future, it is essential that California's educators confront the problem of the widespread failure to provide an adequate education to underprivileged minorities such as the black children who brought this lawsuit. Educators have too often been able to rationalize inaction by blaming educational failure on an assumed intellectual inferiority of disproportionate numbers of black children. That assumption without validation is unacceptable, and it is made all the more invidious when "legitimized" by ostensibly neutral, scientific IQ scores. (Ysseldyke & Algozzine, 1990)

These dramatically altered criteria were created to reduce the racial discrimination associated with this placement. Nevertheless, there is continued evidence of a statistically significant over-representation of minorities in these special education categories (Benner, 1998). Special education pupil count data for California's 1981–1982 school year, for example, revealed that 17.5% of black children were classified as EMH, although they made up only 9% to 10% of the school population (de la Cruz, 1996).

In contrast to the *Larry P* case, where the ruling was in favor of the plaintiffs, in other noteworthy cases such as *PASE v. Hannon* (1980), *Marshall et al. v. Georgia* (1984), *S-1 v. Turlington* (1986), and *Crawford v. Honig* (1988), the rulings were against the plaintiffs. In several of these cases, the facts were similar to the *Larry P* case, but the outcome was the opposite.

In the *PASE v. Hannon* case, Parents in Action on Special Education (PASE) brought a class-action suit on behalf of all black children in the Chicago Public Schools (CPS) who had been or would have been placed in classes for individuals with EMH. The plaintiffs noted that black students made up 82% of the enrollment in classes for individuals with EMH, whereas only 62% of the total CPS enrollment was black (Salvia & Ysseldyke, 1995). The judge sided

with the defendants and ruled that IQ tests were not biased and that multifactored assessments guarded against misplacement in the case of EMH (Turnbull, 1993).

The *Marshall et al. v. Georgia* (1984) case was another class-action suit filed by the Georgia Legal Services, Inc., and the Georgia State Conference of Branches of National Association for the Advancement of Colored People (NAACP) on behalf of all black students in Georgia public schools, alleging violations of sundry statutory and constitutional rights (Reschly & Bersoff, 1999). The plaintiffs alleged that Georgia schools had a statistically significant over-representation of black students in the EMH program. The judge opined that socioeconomic conditions of poverty among black students in Georgia provided a sufficient explanation for their over-representation, thus dismissing the plaintiffs' claim concerning discrimination by race and improper classification (Reschly & Bersoff, 1999; Swanson & Watson, 1989).

In the *S-1 v. Turlington* (1986) case, over-representation of black students in EMH programs in Miami, Florida, served as the emphasis in this class-action trial. The plaintiffs placed more emphasis on test bias and the interpretation of the sociocultural background of the federal regulations embodied in the then-current IDEA regulations. The trial court dismissed the claims of the plaintiffs "with prejudice" and decertified the case, meaning that the plaintiffs did not establish a prima facie case of discrimination and that re-establishing a similar suit on these claims in this district would be extremely difficult. The court's ruling further stated that the plaintiffs failed to prove that black students had been improperly classified and placed in EMH (Reschly & Bersoff, 1999; Reynolds & Gutkin, 1999).

The *Crawford v. Honig* (1988) case was also a class-action suit against the California Department of Education on behalf of black students whose parents were prevented by the 1986 *Larry P.* injunction from making decisions about IQ testing in pre-placement evaluations of their

children, a right that parents of white children could exercise (Reschly & Bersoff, 1999). The crux of the case centered on the school's refusal of a mother's request to administer an intelligence test to her son, Desmond Howard. Desmond's mother was Hispanic and his father was black, but on the school racial code, the box checked for Desmond was "black." If his mother agreed to change his race to Hispanic, he could be tested, but under the prohibition against testing black students imposed in the *Larry P.* verdict, he could not be given an intelligence test (MacMillan & Reschly, 1998). Thus, the verdict was similar to the *Larry P.* outcome, but not without some confusion for parents with bi-racial children.

Obstacles to Change

It is natural for people to oppose change, and the literature review bore out some educators' reasons for resisting change to resolve the issue of over-representation of blacks in EMH. The discussion below describes some of the reasons proffered in the literature.

According to Grossman (1998), many professors of education bear some of the responsibility for the lack of diversity among educators. He noted that professors spend little time recruiting poor and minority students into their teacher preparation programs. He suggested that special education professors must recruit into their teacher preparation programs individuals who are devoted to improving the education of all students: minorities, poor, migrant, immigrant, and rural students, as well as middle-class, white students. The recruitment of bilingual individuals, who understand and appreciate students' cultural and linguistic characteristics, should also be given special attention.

Grossman (1998) suggested five reasons many special educators resist learning about students' cultural, contextual, and linguistic characteristics that could influence their attitudes

towards minority students and reduce the large percentage of children being referred to EMH. These reasons are

1. The lack of diversity among special educators
2. Their prejudicial attitudes
3. Their reluctance to “rock the boat” because of the risks involved
4. Their unwillingness to expend the energy involved in teaching in a multicultural manner
5. Their lack of preparedness for working with the diverse group of students in EMH programs.

Special education teachers usually are not representative of the students they work with. Teachers from poor backgrounds and from minority backgrounds are scarce. Although 32% of students in special education programs are from culturally diverse backgrounds, only 14% of their teachers are from minority groups. Even here, many of these minority teachers are significantly more likely to leave this field of teaching (Cook & Boe, 1995). Spellman (1988) suggested that if the current decline in minority educators continues, the numbers would decrease to 6% by the year 2000.

Marlowe (2001) stated that another problem with special educators is that many are reluctant to work as special educators particularly when they can secure regular education teaching positions. He categorized the disincentives to working in the field to include a staggering amount of paperwork; overwhelming caseloads; endless meetings; escalating disciplinary problems; and increasingly adversarial, uncivil, and litigious parents. Many of the teachers feel that the job requires almost daily compromising of one’s integrity, since special educators must often choose between protecting the fiduciary interests of the school that

provides them with a job and the educational needs and civil rights of their charges. Marlowe stated that all too often, the most highly trained special educators "wallow in a sea of paperwork, while well-meaning, but undertrained and underpaid paraprofessionals, volunteer grandmothers, and special education aides provide direct service to the nation's neediest students" (p. 43). Paraprofessionals turn over just as quickly as special education teachers, because, despite their hard work and dedication, they often lack the skills needed to work with these challenging pupils, especially when they work for barely more than minimum wage.

Grossman (1998) also asserted that many special educators do not want to know that their teaching methods are culturally, contextually, and linguistically inappropriate for some of their students. Some of these educators may think that doing right by their students will put them at risk with other teachers and may also jeopardize their job security. They may also be unwilling to commit themselves to the additional time and effort that are necessary to adapt their teaching styles to their students' different needs (Grossman, 1995; Suzuki, 1984).

Ideas for Reducing the Over-Representation of Blacks in EMH

Several researchers have proffered suggestions for resolving over-representation of blacks in EMH. While some of the proposals might sound draconian and impractical, others appeared to be feasible and could be implemented. The ideas ranged from recruiting culturally diverse teacher-preparation students, changing the curricula in teachers' colleges to embody more multicultural studies, re-assessing how students are evaluated and the testing protocols that are used to appraise them, overhauling the entire special education system, implementing a "systems" approach of early detection and intervention, and working with families to provide as much support and services as possible. Some suggestions are more teacher focused, while others

are student centered. The discussion in this section proceeds with those proposals that are teacher focused and then to others that are more child centered.

One of the more beneficial areas to explore in this search for more effective education for black students in EMH might be the incorporation of multicultural education principles in the pre-service preparation of general and special education teachers. The studies of Banks and Grant and Sleeter focused on teaching content about cultural pluralism, teaching culturally different students, and using cultural pluralism to teach other academic subjects and intellectual skills (Gay, 1994). If those components of teacher training that have to do with curriculum, classroom management, and evaluation are broadened to include diversity, cultural pluralism, and culturally relevant modalities and strategies, teachers in regular education would be prepared more effectively to work with a broader cross-section of students and their differing abilities. With the acquisition of cultural and linguistic knowledge and new perceptions and practices, teachers would probably make fewer referrals of black children for EMH services and therefore reduce the disproportionate number of black children in these programs. If the special education teachers also incorporated this body of knowledge into their work, they would be better prepared to offer appropriate educational services to black students (Valles, 1998).

Other researchers suggested that special education personnel preparation programs should offer multicultural modality training (Patrick, 1986; So, 1987). They suggested that during their teacher-training programs, special educators should have firsthand experience with poor and black students, so that they may understand more effectively how these students live. Attempts should be made to identify and utilize training sites where pre-service teachers can develop their budding practices while working in these diverse settings (Valles, 1998).

Teachers must also be taught to change their expectations regarding student achievement, evaluation procedures, instructional techniques, curriculum materials, and classroom management techniques to make them as free from bias as possible (Benner, 1998; Bernal & Bernal, 1974; Grossman, 1995; Patrick, 1986; So, 1987). The pre-referral process leading up to EMH identification should also be systemically studied. This process has not been fully utilized to confirm or disconfirm EMH diagnoses for blacks (Serna, Forness, & Nielsen, 1998). Special educators must be willing to re-examine their role and re-evaluate how they can improve on the services they provide, especially in light of the fact that the student body will continue to be more diverse in the future (Valles, 1998).

Ewing (1995) stated that student learning could be enhanced through an educator's awareness and knowledge of racial differences. Educators should have a more heightened regard and authentic knowledge of various races and cultures and a greater understanding of the impact of cultural variances upon student behavior. In addition, a diverse teaching force might assist in reducing the number of students who are mislabeled, which would lead to the lowering of the over-representation of black students in EMH. High quality teachers for EMH students would also be beneficial. The Civil Rights Project (2002) recommended that the federal government should insist that states receiving Title I and IDEA grants make substantial progress toward ensuring black students in both general and special education have equitable access to high quality teachers.

While Payne (2001) did not focus specifically on EMH children, she suggested that teachers and educators who work with poor children (as many blacks are) should seek to develop positive relationships with these students, because these relationships become significant motivators for poor students. Relationships can be developed by establishing a caring

environment for them, promoting student achievement, providing role modeling, and insisting on successful behaviors.

Marlowe (2001) recommended that a radical overhauling of special education is needed to keep talented individuals in the field of special education. He advocated the elimination of paraprofessionals at this level. He proffered the idea of using paralegals to do the massive amount of federal and state mandated paperwork, thus allowing the special educators to teach the neediest students; and providing expert consultation to help regular teachers grant students with handicaps the appropriate education warranted.

Some researchers recommended a "systems" approach to reduce the disproportionate representation of blacks in EMH. This approach includes early detection and primary prevention, assessment, culturally sensitive instruction, and school–home–community relationships (Serna et al., 1998). Early detection implies recognition of a child's problem before it becomes a matter of referral. Parents, teachers, or doctors could make the detection. Primary prevention includes developmental or incremental stages as a means of intervention and is meant to forestall emotional and academic problems in children. Investments in high-quality special education and early intervention are also sorely needed and could reduce the likelihood that black students with EMH will develop serious discipline problems or eventually drop out of school (Civil Rights Project, 2002).

Jensen (1969) suggested that the intensity and specificity of the instructional aspects in early childhood programs could help boost academic gains. He argued not only for ordinary preschool attendance but also for enrichment programs with special cognitive training, especially in verbal skills to be added to programs to increase IQ gains by as much as 10 points. Jensen was of the opinion that highly concentrated, direct instruction emphasizing basic skills is more

effective in improving academic success than the more diffuse cultural enrichment. He believed that educators should concentrate on these types of instructional methods and the use of direct tests of the skills the instructional programs are intended to inculcate, and they should de-emphasize IQ tests as a means of assessing student gains.

Other diagnosticians have taken another look at intelligence testing and are pressing forward with changes. One such model is the Kaufman Assessment Battery for Children (K-ABC). This model shifts assessment from content to process. Another is the Planning, Attention, Simultaneous, Successive Model or PASS that was developed by Naglieri, Das, and Jarman for discriminatory assessment and intervention planning. The PASS model incorporates a series of questions in the analysis of a child's planning processes during the act of problem solving. These investigators cited research confirming that simultaneous, successive, and planning processes are related to achievement, including measures of reading comprehension, reading decoding, performance in college-level English courses, and mathematics (Benner, 1998).

Artiles and Zamora-Duran (1997) continued in this vein by suggesting the use of performance-based testing and portfolio assessment. They suggested that performance-based testing is especially critical for special educators in light of the traditional and central role that assessment has played in EMH practice. They argued that portfolio evaluation can be used to support primary language instruction; document students' funds of knowledge; function as a reflective tool; support high level, complex problem solving; show that teachers and students are making a difference; and demonstrate to parents and the larger community the growth and achievement of students. In similar fashion, others have argued that examining Gardner's concept of multiple intelligence would declare that students should be measured not only by linguistic and reasoning ability but also by other modalities of intelligence (Benner, 1998).

Jensen (1969) mentioned that possibilities for greater rewards for all concerned exist when various student abilities and different modes of learning are explored to fulfill the objectives of educating children. He declared:

> If diversity of mental abilities is a basic fact of nature, and if the ideal universal education is to be successfully pursued, it seems a reasonable conclusion that schools and society must provide a range and diversity of educational methods, programs, and goals and of occupational opportunities, just as wide as the range of human abilities. Accordingly, the ideal of equality of educational opportunity should not be interpreted as uniformity of faculties, instructional techniques, and educational aims for all children. Diversity rather than uniformity of approaches and aims would seem to be the key to making education rewarding for children of different patterns of ability. The reality of individual differences thus need not mean education rewards for some children and frustration and defeat for others. (p. 82)

Bill East, the executive director of the National Association of State Directors of Special Education, said that school districts and states should be concerned about the way they identify EMH students. “They need to look at programs and practices very closely, and do everything they can to make sure that the problems the Civil Rights Project at Harvard University brought out are not happening in their districts” (Fine, 2001, p.6). School and program administrators should be including in-service training of multicultural and bilingual education for all teachers, so as to generate systemic support strategies, and fostering policy development for encouraging these practices in the classrooms and in the schools (Sexton, Lobman, Constans, Snyder, & Ernest, 1997).

Artiles, Aguirre-Munoz, and Abedi (1998) suggested that professionals must assess family size when working with black students. They should determine whether family members know how to use existing resources and, if not, assist them in identifying and maximizing resources to benefit themselves. These researchers also noted that special educators must help parents develop systems that will strengthen their children’s study and work habits and educate parents about family structures and rules. Black parents should also be empowered to seek

remedies in addressing the disproportionate placement of their students in EMH classes. Federal legislation should include a private right or action and an opportunity for judicial review for individuals and classes of complainants specific to racial disproportionality, but structured so that these rights and remedies would not detract from, or delay, the exercise of rights or opportunities for private action that exist under the current state or federal law (Civil Rights Project, 2002). Finally, educators must get to know their black students in order to understand how they perceive themselves and the school culture (Artiles et al., 1998).

The continued misuse of the education bureaucracy in fostering and encouraging a system of tracking that result in an inferior education for black students should be eliminated. Alternative approaches to meeting the educational needs of all children, regardless of race, culture, poverty level, or linguistic preferences, can be offered without the necessity of labeling children merely because they are different. Simultaneously, diagnostic measures that are designed to eliminate the current biases inherent in some psychological evaluations must be established so black children who are identified EMH can be properly identified and served (Benner, 1998).

CHAPTER 3

METHODOLOGY

Introduction

The purpose of this chapter is to describe the methods and procedures used in the collection and analysis of data of this study. The four sections of this chapter are organized as follows: (a) statement of the problem, (b) research questions, (c) methodology, (d) data collection and analysis of data.

Problem Statement

Over-representation of black students is a problem when it comes to EMH, because of the perceptions and stigma it evokes for the individual students, their families, the community, and the wider population (MacMillan & Reschly, 1998). It also gives the impression that black students in general are not intelligent. This identification creates an assumption that they cannot learn and, for the most part, are deemed to lead a substandard existence, especially since intelligence, via education, has its greatest effect in the assortment of individuals into occupational roles (Jensen, 1969).

The literature suggests that the socioeconomic status of students bears a significant relationship to the identification and placement of students into EMH. Children who live in poverty have a greater likelihood that they will be recognized as EMH (Artiles & Trent, 1994;

MacMillan & Reschly, 1998; Monson, 2003; Newman, 1995; Oswald et al., 1999; Yeargin-Allsopp et al., 1995).

The characteristics of the public school district may also influence identification of these children. In measuring socioeconomic status, White, in his 1982 analysis of more than 70 different variables used to measure SES, found that the top three variables in the school resources category were instructional expense per pupil, salary of teachers, and percentage of teachers with master's degrees (Valencia & Suzuki, 2001). Two of these variables—expenditure on students' education or FTE and teachers' advanced learning—along with school district's wealth, population density (urbanicity), size, and racial composition of full-time, non-instructional staff have been included as the characteristics of school districts that will be analyzed to measure their effects on the identification of black students in EMH.

Research Questions

1. Is there an over-representation of black students in EMH in the 67 public school districts in Florida?
2. Does the socioeconomic status of school districts affect the proportions of white, black, and Hispanic students identified as EMH?
3. Does the wealth of school districts affect the proportions of white, black, and Hispanic students identified as EMH?
4. How do the characteristics of public school districts (population density or urbanicity; size of districts based on student enrollment; racial composition of the full-time, non-instructional staff; percentage of teachers with bachelor's degrees; and district

expenditures per student) affect the proportions of white, black, and Hispanic students identified as EMH?

Hypothesis 1: There is no statistically significant over-representation of blacks in EMH in the 67 public school districts in Florida at the .05 significance level.

Hypothesis 2: There is no statistically significant difference between the proportions of white, black, and Hispanic students identified as EMH when the socio-economic status of school districts is the independent factor of measurement at the .05 significance level.

Hypothesis 3: There is no statistically significant difference between the proportions of white, black, and Hispanic students identified as EMH when school districts' wealth is the independent factor of measurement at the .05 significance level.

Hypothesis 4: There is no statistically significant difference between the proportions of white, black, and Hispanic students identified as EMH when the characteristics of the school districts are independent factors of measurement at the .05 significance level.

Methodology

Data were collected from all 67 public school districts in Florida as reported to the Florida Department of Education database for the school year 2001–2002. The Statistical Package for Social Science (SPSS) Graduate Package (11.0) was used to analyze the data. Percentages and proportions were calculated to determine whether there was over-representation of black students in EMH. Further analysis was done using the general linear model with repeated measures.

The number and percentage of students on free and reduced lunch were calculated to determine the socioeconomic status of public school districts. The proportion of students

receiving free and reduced lunch in the three major races was calculated by dividing the total number of students receiving free and reduced lunch in each major racial group by the total number of students in the corresponding racial group for each public school district. These proportions were then ranked into these three categories:

- 0–39 % of students on free/reduced lunch - High SES school districts
- 40–59 % of students on free/reduced lunch - Medium SES school districts
- 60–100% of students on free/reduced lunch -Low SES school districts

The general linear model with repeated measures was used to analyze the data to see if there was a statistically significant difference between the proportions of white, black, and Hispanic students identified as EMH when socio-economic status of school districts was the independent factor of measurement. A plot was generated to demonstrate visually the difference between the proportions of white, black, and Hispanic students identified as EMH when socioeconomic status was the independent factor of measurement.

The wealth of public school districts was based on non-exempt, assessed valuation of property divided by the total student enrollment within that public school district. This calculation determined the wealth of the school district. School districts were arbitrarily ranked in the following manner based upon their wealth:

- $0–$199,999 -Poor district
- $200,000–$349,999 -Middle district
- $350,000–$599,999 -Upper middle district
- $600,000 and above -Wealthy district

The general linear model with repeated measures was used to determine whether there was a statistically significant difference between the proportions of white, black, and Hispanic

students identified as EMH when the wealth of school districts was the independent factor of measurement. A plot was generated to demonstrate visually the difference between the proportions of white, black, and Hispanic students identified as EMH when public school district wealth was the independent factor of measurement.

The districts were grouped into regions based on their population density (urbanicity). Five school districts were categorized as urban, 25 as suburban, and 37 as rural. The general linear model with repeated measures was used to analyze the data. A plot was generated to demonstrate visually the difference between the proportions of white, black, and Hispanic students identified as EMH when public school district population density (urbanicity) was the independent factor of measurement.

Public school districts were also classified based on size. Size of school district was defined by student enrollment in that public school district. School districts were arbitrarily ranked based on the number of students enrolled for 2001-2002 as follows:

- A small district had 1 to 29,999 students
- A medium-sized district had 30,000 to 59,999 students
- A large district had 60,000 to 89,999 students
- A very large district had 90,000 and more students

The general linear model with repeated measures was used to analyze the data. A plot was generated to demonstrate visually the difference between the proportions of white, black, and Hispanic students identified as EMH when the size of public school districts was the independent factor of measurement.

Because of its large representation within the majority of school districts, white, full-time, non-instructional staff was grouped and ranked within the 67 school districts. A percentage

of white, full-time, non-instructional staff was calculated for each district and that percentage became the basis of the ranking. School districts' white, full-time, non-instructional staff was arbitrarily ranked as follows:

- School districts with 0.00 to 59.99 percent white, full-time, non-instructional staff
- School districts with 60.00 to 69.99 percent white, full-time, non-instructional staff
- School districts with 70.00 to 79.99 percent white, full-time, non-instructional staff
- School districts with 80.00 to 89.99 percent white, full-time, non-instructional staff
- School districts with 90.00 to 100.00 percent of white, full-time, non-instructional staff

The general linear model with repeated measures was used to analyze the data. A plot was generated to demonstrate visually the difference between the proportions of white, black, and Hispanic students identified as EMH when white, full-time, non-instructional staff of public school districts was the independent factor of measurement.

To test the hypothesis on whether teachers' degrees affected the proportions of white, black, and Hispanic students identified as EMH, school districts were categorized based on the percentage of teachers with a bachelor's degree. There were three categories within this characteristic. The percentage of teachers with a bachelor's degree in the school districts were ranked as follows:

- School districts with 1.00 to 59.99% of teachers with a bachelor's degree
- School districts with 60 to 69.99% of teachers with a bachelor's degree
- School districts with 70% or more of teachers with a bachelor's degree

The general linear model with repeated measures was used to analyze the data. A plot was generated to demonstrate visually the difference between the proportions of white, black,

and Hispanic students identified as EMH when the percentage of teachers with a bachelor's degree was the independent factor of measurement.

The average FTE within school districts were categorized and ranked. The categories are as follows:

- School districts with FTE between $5,000 to $5,499
- School districts with FTE between $5,500 to $5,999
- School districts with FTE between $6,000 to $6,499
- School districts with FTE between $6,500 and above

The general linear model with repeated measures was used to analyze the data. A plot was generated to demonstrate visually the difference between the proportions of white, black, and Hispanic students identified as EMH when public school districts' FTE was the independent factor of measurement.

Data Collection and Analysis

SPSS Graduate Package (11.0) was the main statistical tool used to analyze the data that were collected from the Florida Department of Education database. The first purpose of the research was to determine if there was an over-representation of black students in EMH in Florida in 2001–2002 based on the definition presented previously. Second, the researcher sought to identify any significant difference between the proportions of white, black, and Hispanic students identified as EMH when socioeconomic status of school districts was the independent factor of measurement. Third, this investigator sought to identify any significant difference between the proportions of white, black, and Hispanic students identified as EMH when public school district wealth was the independent factor of measurement. Finally, this

researcher examined some of the characteristics of the school districts and sought to identify any significant difference in the proportions of white, black, and Hispanic students identified as EMH when these characteristics were the independent factors of measurement.

The first hypothesis was that there was no statistically significant over-representation of blacks identified as EMH. The second hypothesis was that there was no statistically significant difference between the proportions of white, black, and Hispanic students identified as EMH when the socioeconomic status of public school districts was the independent factor of measurement. The third hypothesis was that there was no statistically significant difference between the proportions of white, black, and Hispanic students identified as EMH when school district wealth was the independent factor of measurement. The final hypothesis was that there was no statistically significant difference between the proportions of white, black, and Hispanic students identified as EMH when the characteristics of the school districts (population density or urbanicity, size of the districts based on student enrollment, racial composition of full-time, non-instructional staff, the percentage of teachers with a bachelor's degree, and the district expenditure per student) were the independent factors of measurement.

Summary

Chapter 3 presented the methodology used in the collection of data for this study. The research design and method of analysis were also explained. Subsequent chapters contain data analyses, findings of the data analyses, discussion of quantitative data gathered, and implications of the results of this study for further research.

CHAPTER 4

DATA ANALYSIS

Introduction

This study examined the representation of black students in EMH in K–12 schools within the 67 public school districts of Florida. The analysis of data from the Florida Department of Education database for school year 2001–2002 is presented in this chapter.

Description of the 67 Public School Districts

Computation from the public school districts in Florida illustrated interesting results concerning the demographic characteristics of student enrollment and district characteristics. Table 1 depicts data on total student enrollment, EMH enrollment, and total students on free/reduced lunch.

Table 1

Total Student Enrollment, Total EMH Students, and Total Students on Free/Reduced Lunch for Florida's 67 Public School Districts for School Year 2001–2002

	White		Black		Hispanic		Total students
	#	%	#	%	#	%	
Total enrollment	1,282,231	51.4	611,384	24.5	504,639	20.2	2,495,426
Total EMH	9,650	32.7	15,791	53.5	3,673	12.4	29,521
Total on free/reduced lunch	336,628	30.6	417,715	38.0	310,788	28.2	1,100,623

The largest school district was Dade with 374,806 students, and the smallest was Lafayette with 1,030 students. The school district that had the largest percentage of EMH white students was Holmes (94.6% of the total EMH student population was white). The district with the largest percentage of EMH black students was Gadsden (89.4%). The district with the largest percentage of EMH Hispanic students was Hardee (54%).

Five school districts were classified as "urban" (Broward, Dade, Duval, Hillsborough, and Orange), 25 as "suburban," and 37 as "rural." Based on the wealth of the school districts, 22 were classified as "poor," 25 as "middle," 12 as "upper middle," and 8 as "wealthy." The eight "wealthy" school districts in descending order were Monroe, Collier, Walton, Franklin, Sarasota, Martin, Indian River, and Lee. (See Table 2.) (For a complete list of school districts, their wealth and rank, urbanicity, and size, see Tables 16 and 17 in the Appendix.)

Table 2

Classification of School District Wealth, Number, and Percentage of Districts in Each Category

District wealth	# of districts	Percent of total districts
$0–$199,999	22	32.8
$200,000–$349,999	25	37.3
$350,000–$599,999	12	17.9
$600,000 and above	8	11.9
Total Florida districts	67	99.9

Note: Total percent less than 100 due to rounding error.
District wealth = non-exempt, assessed valuation of property / total student enrollment for each school district. Source for non-exempt, assessed valuation of property: 2001–02 Funding for Florida School Districts—Statistical Report of Florida Department of Education
Number of districts = number of public school districts that fit into each category
Percent of total districts = percent of public school districts that represents each category

The faculty of Florida's school districts comprised the following degreed personnel: 89,970 (60.3%) teachers had a bachelor's degree; 53,621 (35.9%) had a master's degree; 4,019 (2.7%) had a specialist degree; and 1,664 (1.1%) had a doctoral degree. There were 189,350 white, full-time, non-instructional staff members; 57,683 black, full-time, non-instructional staff members; and 30,091 Hispanic, full-time, non-instructional staff members for a total of 279,894 full-time, non-instructional staff employees.

Research Question 1

Is there an over-representation of black students in EMH in the 67 public school districts in Florida?

In this study, "over-representation" of a given racial group occurs when the proportion of that racial group enrolled in a given category of special education exceeds the proportion of the racial group in the school population at the local, district, state, or national level (Macmillan & Reschly, 1998). In Tables 12 and 13 in the Appendix the data were presented for all 67 school districts regarding the number and percentage of students enrolled in the general school population classified by race and the corresponding number and percentage of students enrolled in EMH also classified by race for school year 2001–2002.

In two school districts, the percentage of whites in EMH was greater than the percentage of whites in the general school enrollment: Gadsden (6.0% vs. 5.7%) and Holmes (94.6% vs. 94.2%). These differences were not important for this study because the percentage differences were minuscule.

For Hispanic student enrollment in EMH compared with the general student population, the picture was different. In 17 school districts, the percentage of Hispanic enrollment in EMH was greater than the percentage of Hispanic students in the general student body. However, only 13 cases were considered important for this study because the percentage differences between Hispanics in general enrollment and Hispanics in EMH programs were considerable, as shown in Table 3.

Table 3

Hispanics in General Enrollment and Hispanics in EMH for 13 School Districts

School district	General enrollment		EMH	
	#	%	#	%
Bradford	51	1.3	3	2.3
Dixie	16	0.7	2	2.9
Franklin	11	0.8	9	2.8
Hardee	2155	45.1	61	54.0
Hernando	1219	6.8	11	8.3
Highlands	2082	18.4	47	21.9
Lafayette	103	10.0	4	20.0
Liberty	36	2.7	2	4.4
Manatee	6041	15.8	98	20.9
Martin	2243	13.4	49	28.8
Monroe	1947	21.0	28	26.4
Santa Rosa	431	1.9	12	3.1
Union	36	1.7	1	3.3

Note: Percentage of Hispanic students in general enrollment = total number of Hispanics in general enrollment / total student enrollment x 100.
Percentage of Hispanic students in EMH = total EMH Hispanic / total students in EMH x 100.

The situation among black students was different from those of white and Hispanic students. (See Tables 12 and 13 in Appendix.) In all 67 school districts, the percentage of black students in EMH was greater than the percentage of black students in the general school enrollment. In 15 public school districts, the percentage of blacks in EMH was equal to or slightly greater than the percentage of blacks in the general enrollment. In 35 public school districts, the percentage of blacks in EMH was twice the percentage of blacks in the general enrollment. In 16 of the public school districts, the percentage of blacks in EMH was three times the percentage of blacks in the general enrollment. In one public school district (St. Johns), the percentage of blacks in EMH was four times the percentage of blacks in the general school

population. The smallest difference between the percentage of blacks in EMH and the percentage of blacks in the general enrollment occurred in Gadsden (89.4% vs. 84.3%) and Holmes (5.4% vs. 3.0%). In all the other 65 public school districts, the difference between these two figures was stark. In 52 (77.6%) of the 67 public school districts, the percentage of blacks in EMH was more than two times the percentage of blacks in the general school enrollment. (See Table 13 in Appendix.)

SPSS –11.0 was used to further analyze the data. A proportion of each major race in the general student enrollment was calculated initially by dividing the total number of white, black, and Hispanic students, respectively, by the total student enrollment for each school district. Then a proportion was calculated for EMH students in each of the three major racial groups in the 67 school districts. This proportion was calculated by dividing each major racial group with EMH by the total EMH enrollment of each public school district. The proportion of each of the three major racial groups for EMH students was then divided by the corresponding racial proportion of students in the general student population to yield ratios that could then be analyzed by the general linear model with repeated measures.

For example, in school year 2001–2002, Escambia school district had 25,441 white students, 16,375 black students, and 743 Hispanic students, or 56.98%, 36.68%, and 1.66%, respectively, for whites, blacks, and Hispanics in student enrollment. There were 531 total EMH students. White students identified as EMH were 164 or 30.89% of this total. EMH blacks equaled 358 (67.42%) of the total. There were three (0.56%) EMH Hispanics. Therefore, the resulting calculations were 30.89/56.98, 67.42/36.68, and .56/1.66, respectively, for whites, blacks, and Hispanics. The resultant proportions calculated were: 0.54, 1.84, and 0.34 for EMH whites, EMH blacks, and EMH Hispanics, respectively. When the proportion of students with

EMH in any given racial group is greater than the proportion of that racial group in the general student enrollment, then that racial group is over-represented in EMH, as is the case for blacks in the Escambia school district. (See Table 14 in the Appendix for a complete list of the proportions of EMH whites, blacks, and Hispanics in the 67 school districts.)

The proportions of the three major racial groups with EMH were used as the dependent variables for all of the analyses that follow. For Research Question 1, the ratios of the racial groups for general school enrollment were the independent variables. For Research Question 2, socioeconomic status (percentage of students on free/reduced lunch) was the independent variable. For Research Question 3, wealth of the school districts was the independent variable. For Research Question 4, district urbanicity, district size, number of white, full-time, non-instructional staff, percentage of teachers with a bachelor's degree, and district FTE were the independent variables that were analyzed individually.

A significance level of .05 was selected for all questions. It was hypothesized that there would be no statistically significant difference in the proportions of white, black, and Hispanic students identified as EMH when measuring these different variables. Using *F* adjusted by Greenhouse Geisser, the cumulative results of all the analyses appear in Table 4.

Table 4

Ratio of Whites, Blacks, and Hispanics Identified as EMH to Eight Variables Under Study Within Florida's 67 Public School Districts for School Year 2001–2002

Tests of within-subject effects: Analysis performed	df	Mean Square	F	Partial Eta sq.
EMH racial proportions to general enrollment	1.697	80.646	180.46**	.732
EMH racial proportions to free/reduced lunch students	1.735	55.568	148.18**	.698
EMH racial proportions to school district wealth	1.633	1.801	4.12*	.062
EMH racial proportions to school district urbanicity	1.665	39.668	91.35**	.588
EMH racial proportions to school district size	1.697	48.723	108.52**	.633
EMH racial proportions to white, full-time staff	1.655	46.911	106.27**	.632
EMH racial proportions to teachers with bachelor's	1.730	59.304	137.46**	.682
EMH racial proportions to school district FTE	1.711	50.844	115.30**	.647

* $p < .05$. ** $p < .01$.

The results showed that the mean of the ratio of EMH white students to the proportion of total white students in the general enrollment was .663, *SD* = .167. The mean of the ratio of EMH black students to the proportion of total black students in the general enrollment was 2.504, *SD* = .713. The mean of the ratio of EMH Hispanic students to the proportion of total Hispanic students in the general enrollment was .860, *SD* = .809.

The test of within-subjects effects showed that F (1.697, 111.992) = 180.46, p = .000; therefore we can reject Hypothesis 1 and conclude that there is a statistically significant over-

representation of blacks in EMH in the 67 public school districts in Florida. Of the variance in the repeated measure, 73% is explained by the proportional differences. In the pair-wise comparisons, the mean difference between EMH whites and EMH blacks was statistically significant (mean difference = 1.841; standard error = .089; $p < .01$); the mean difference between EMH blacks and EMH Hispanics was also statistically significant (mean difference = 1.643; standard error = .126; $p < .01$); but the mean difference between EMH whites and EMH Hispanics was not statistically significant. The test of within-subject contrasts was not statistically significant.

Research Question 2

Does the socioeconomic status of school districts affect the proportions of white, black, and Hispanic students identified as EMH?

Socio-economic status (SES) is measured by the percentage of enrolled students who were receiving free and reduced lunch for the school year 2001–2002, as reported by the Florida Department of Education database. (See Table 15 in Appendix.) The proportion of students receiving free and reduced lunch in the three major races was calculated by dividing the total number of students receiving free and reduced lunch in each major racial group by the total number of students in the corresponding racial group for each public school district. This proportion was then arbitrarily ranked into three categories, as shown in Table 5.

Table 5

Percentages of Students on Free/Reduced Lunch for School Year 2001–2002

Percentage of students in school districts on free/reduced Lunch	Rank	# of public school districts in each rank
0–39 (High SES)	1	21
40–59 (Medium SES)	2	35
60 and above (Low SES)	3	11

A significance level of .05 was selected. The proportions of EMH whites, EMH blacks, and EMH Hispanics were the dependent variables. The rank of the students receiving free and reduced lunch was the independent variable. It was hypothesized that there would be no statistically significant difference between the proportions of white, black, and Hispanic students identified as EMH when the SES (free/reduced lunch) of the school districts was analyzed. The general linear model with repeated measures was used to analyze the data. The results of the test of within-subject effects are displayed in Table 4 above.

The results showed that the mean of the ratio of total EMH white students across all three ranks of students on free/reduced lunch was .663, *SD* = .167. The mean of the ratio of total EMH black students across all three ranks of students on free/reduced lunch was 2.504, *SD* = .713. The mean of the ratio of total EMH Hispanic students across all three ranks of students on free/reduced lunch was .860, *SD* = .809.

The test of within-subjects effects revealed that F (1.735, 111.023) = 148.179, p = .000; therefore we reject Hypothesis 2 and conclude that there is a statistically significant difference

between the proportions of EMH whites, EMH blacks, and EMH Hispanics when the socioeconomic status of school districts is analyzed. In the repeated measure, 69.8% of the variance is explained by socioeconomic status (free/reduced lunch).

The test of within-subjects contrasts was also statistically significant: F (1, 66) = 501.93, $p < .01$. Pair-wise comparisons were also statistically significant between the mean difference of EMH whites, EMH blacks, and EMH Hispanics. The plot in Figure 1 shows that the estimated marginal mean of the proportion of EMH blacks is almost 3 times greater than those of EMH whites and EMH Hispanics when SES is high (0% to 39% of students on free/reduced lunch), about 2.5 times greater than the proportions of EMH whites and EMH Hispanics when SES is medium (40% to 59% of students on free/reduced lunch), and is just under 2 times greater than the proportions of EMH whites and EMH Hispanics when SES is low (more than 59% of students on free/reduced lunch). The plot shows that the greatest estimated marginal mean of the proportion of EMH blacks occurs in school districts with high SES. The greatest estimated marginal mean of the proportion of EMH Hispanics occurs in school districts with low SES. The estimated marginal mean of the proportion of EMH whites remains constant for all levels of SES.

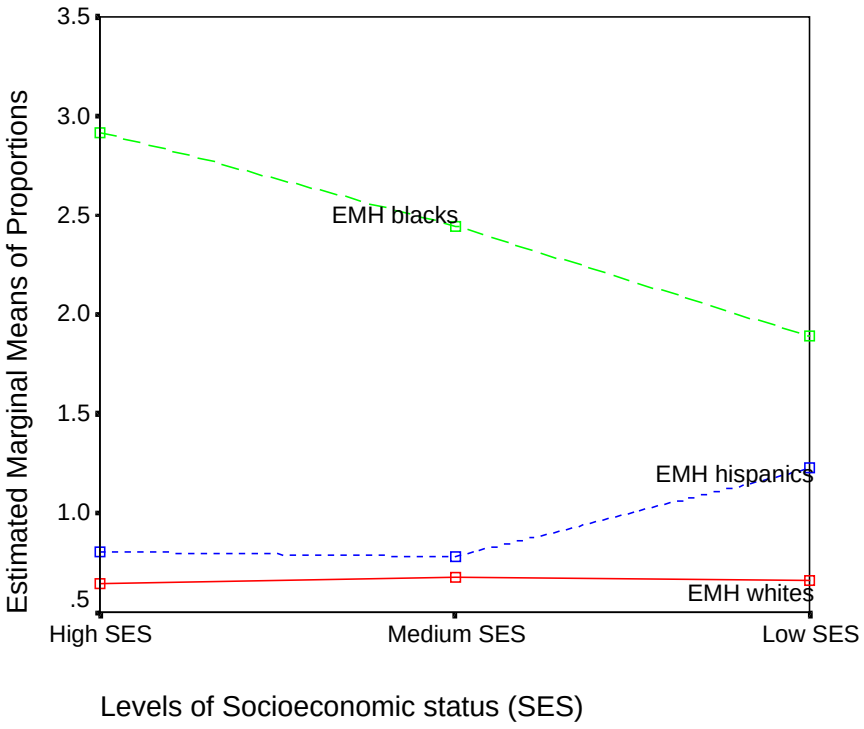

Figure 1: Plot for the Average Proportions of EMH Whites, EMH Blacks, and EMH Hispanics Within Three Levels of Socioeconomic Status Within the 67 Public School Districts

Research Question 3

Does the wealth of school districts affect the proportions of white, black, and Hispanic students identified as EMH?

The data that determined school-district wealth were gathered from the Florida DOE database. (See Table 16 in Appendix.) School-district wealth was computed by taking the non-exempt, assessed valuation of property within each school district divided by the total student enrollment for that district. This calculation determined the wealth of the district. School districts were then arbitrarily classified and ranked in Table 6 based on their wealth.

Table 6

School District Rank Based on Wealth

$	Rank	Category name	# of school districts
$0–$199,999	1	Poor	22
$200,000–$349,999	2	Middle	25
$350,000–$599,999	3	Upper Middle	12
$600,000 and above	4	Wealthy	8

Note: Wealth = non-exempt, assessed valuation of property /total student enrollment for each school district. Source: 2001–2002 Funding for Florida School Districts Statistical Report of Florida Department of Education.

EMH whites, blacks, and Hispanics were then grouped in the wealth-based ranks of the school districts. In other words, all EMH white students were grouped within these four ranks, all EMH black students were grouped within the four ranks, and all EMH Hispanic students were grouped within these four ranks. It was hypothesized that there would be no statistically significant difference between the proportions of white, black, and Hispanic students identified as EMH when school district wealth was measured.

A general linear model with repeated measures was used to analyze the data. A significance level of .05 was selected. The proportions of EMH whites, EMH blacks, and EMH Hispanics became the dependent variable. Rank of wealth was the independent variable. The results of the test of within-subject effects are displayed in Table 4 above.

The results showed that the mean of the ratio of total EMH white students across all four ranks of district wealth was .663, *SD* = .167. The mean of the ratio of total EMH black students

across all four ranks of school district wealth was 2.504, *SD* = .713. The mean of the ratio of total EMH Hispanic students across all four ranks of school district wealth was .860, *SD* = .809.

The test of within-subjects effects showed that F (1.633, 101.266) = 4.122, $p < .05$; therefore we reject Hypothesis 3, concluding that there is a statistically significant difference between the proportions of whites, blacks, and Hispanics identified as EMH when school district wealth is measured. In the repeated measure, 6.2% of the variance is explained by the wealth of school districts. Pair-wise comparisons were also statistically significant between the means of the proportions of EMH whites and EMH blacks and between the means of the proportions of EMH blacks and EMH Hispanics.

The plot in Figure 2 shows that the estimated marginal mean of the proportion of EMH blacks is more than 1.5 times that of EMH whites in poor, middle, upper middle, and wealthy school districts and is more than 1.5 times that of EMH Hispanics in poor, middle, and upper middle school districts. The estimated marginal mean of the proportion of EMH blacks is only 1 time greater than that of EMH Hispanics in wealthy school districts. The plot shows that the greatest estimated marginal means of the proportions of EMH blacks and EMH Hispanics occur in wealthy school districts. The estimated marginal mean of the proportion of EMH whites remains almost constant across all school districts.

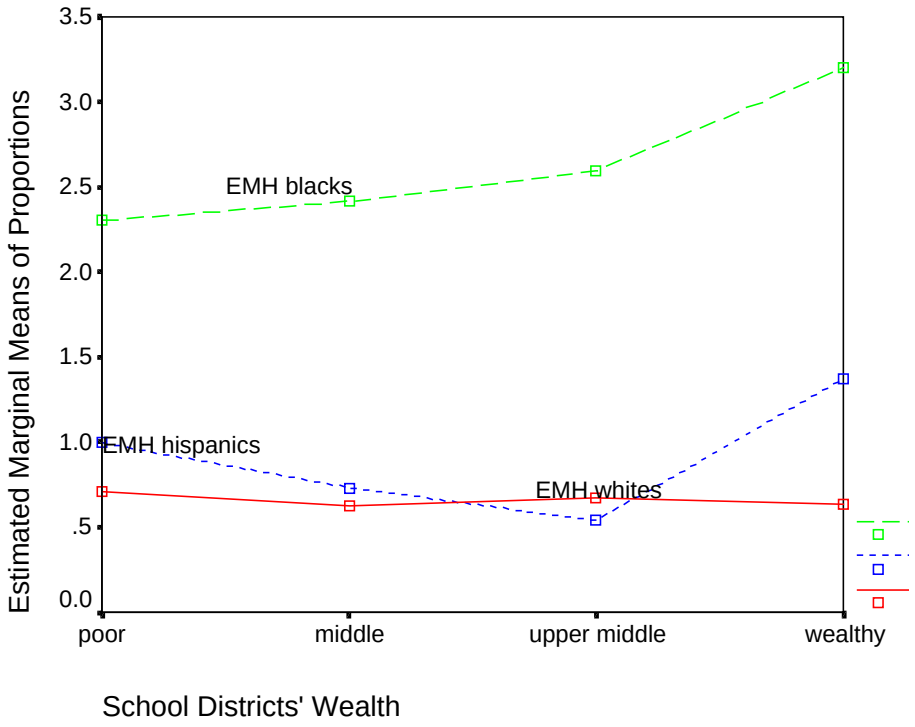

Figure 2: Plot for the Average Proportions of EMH Whites, EMH Blacks, and EMH Hispanics Within Four Ranks of Public School District Wealth

Research Question 4

How do the characteristics of public school districts (urbanicity; size of the district based on student enrollment; racial composition of full-time, non-instructional staff; percentage of teachers with a bachelor's degree; district expenditure per student) affect the proportions of white, black, and Hispanic students identified as EMH?

It was hypothesized that the proportions of white, black, and Hispanic students identified as EMH would not be significantly affected by the characteristics of public school districts. Each component of the public school districts' characteristics was examined individually to assess its influence on the proportions of white, black, and Hispanic students identified as EMH.

Population Density (Urbanicity)

An urban school district was classified as a public school district in Florida not defined by the Florida Department of Education that has within it a major metropolitan city. The five metropolitan cities are Fort Lauderdale, Jacksonville, Miami, Orlando, and Tampa. There were five urban school districts, namely Broward (Fort Lauderdale), Dade (Miami), Duval (Jacksonville), Hillsborough (Tampa), and Orange (Orlando). A suburban school district was defined as a public school district not identified by the Florida Department of Education as rural and which does not meet the criteria for an urban public school district. Twenty-five school districts met this category. A rural school district was defined as a public school district included as one of the 37 public school districts within the three rural regional consortia of the Florida Department of Education. These consortia are the Heartland Educational Consortium, the North East Florida Educational Consortium, and the Panhandle Area Educational Consortium. (See Table 17 in Appendix.) The districts were ranked into three groups as shown in Table 7.

Table 7

School District Urbanicity Rank

Urbanicity	Rank	# of school districts in each rank
Urban	1	5
Suburban	2	25
Rural	3	37

It was hypothesized that there would no statistically significant difference between the proportions of whites, blacks, and Hispanics identified as EMH when school district urbanicity was measured.

A general linear model with repeated measures was used to analyze the data. A significance level of .05 was selected. EMH whites, blacks, and Hispanics were grouped in the three-urbanicity ranks of the school districts (i.e., 1 for urban, 2 for suburban, and 3 for rural). In other words, all EMH white students were grouped within these three categories, all EMH black students were grouped within these three categories, and all EMH Hispanic students were grouped within these three categories. The proportions of EMH whites, EMH blacks, and EMH Hispanics were the dependent variables. The independent variable was the rank of the school district urbanicity. The results of the test of within-subject effects are displayed in Table 4 above.

The results showed that the mean of the ratio of total EMH white students across all three ranks of district urbanicity was .663, *SD* = .167. The mean of the ratio of total EMH black students across all three ranks of school district urbanicity was 2.504, *SD* = .713. The mean of the ratio of total EMH Hispanic students across all three ranks of school district urbanicity was .860, *SD* = .809.

The test of within-subjects effects revealed that F (1.665, 106.591) = 91.348, p = .000; therefore we reject the hypothesis, concluding that there is a statistically significant difference between the proportions of EMH whites, EMH blacks, and EMH Hispanics when school district urbanicity is measured. Of the variance in the repeated measure, 58.8% is explained by the urbanicity of the school district. Pair-wise comparisons were also statistically significant between the means of the proportions of EMH whites and EMH blacks and between the mean of the proportion of EMH blacks and that of EMH Hispanics. The plot in Figure 3 shows that the

greatest estimated marginal mean of the proportion of EMH blacks occurs in suburban school districts. The estimated marginal mean of the proportion of EMH whites and EMH Hispanics rose gradually in suburban and rural school districts, but never rose above 1.0.

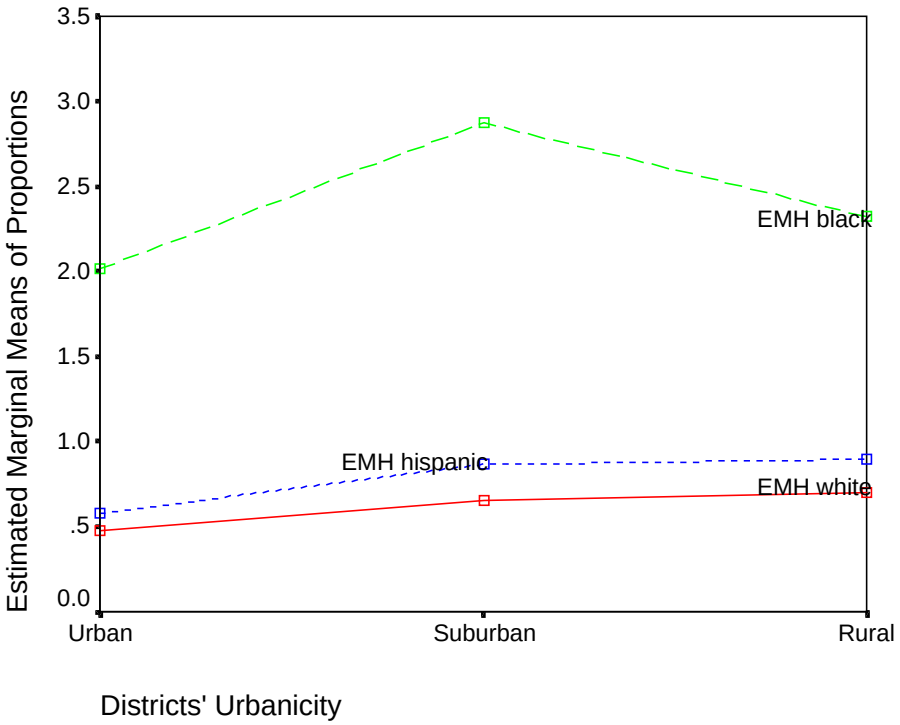

Figure 3: Plot for the Average Proportions of EMH Whites, EMH Blacks, and EMH Hispanics Within Urban, Suburban, and Rural School Districts

School District Size

School districts were placed in ascending order from smallest to largest, based on total student enrollment for school year 2001–2002. (See Table 17 in Appendix.) They were then arbitrarily categorized and ranked. There were four ranks of school districts based on student enrollment as depicted in Table 8.

Table 8

School District Rank Based on Student Enrollment for School Year 2001–2002

Total student enrollment	School district size	Rank	# of public school districts in category
1–29,999	Small	1	44
30,000–59,999	Medium	2	11
60,000–89,999	Large	3	5
90,000 and above	Very large	4	7

The seven smallest school districts were Lafayette with 1,030 students, Glades (1,099), Liberty (1,321), Franklin (1,442), Jefferson (1,709), and Union (2,130). The seven largest school districts were Dade with 374,806 students, Broward (262,027), Hillsborough (169,682), Palm Beach (159,862), Orange (156,905), Duval (126,919), and Pinellas (114,251).

EMH whites, blacks, and Hispanics were grouped in the size-based ranks of the school districts. In other words, all EMH white students were grouped within these four ranks, all EMH black students were grouped within these four ranks, and all EMH Hispanic students were grouped within these four ranks. It was hypothesized that there would be no statistically significant difference between the proportions of whites, blacks, and Hispanics identified as EMH when school district size was measured.

A general linear model with repeated measures was used to analyze the data. A significance level of .05 was selected. The dependent variable was the proportions of EMH whites, EMH blacks, and EMH Hispanics. The independent variable was school district size. The results of the test of within-subject effects are displayed in Table 4 above.

The results showed that the mean of the ratio of total EMH white students across all four ranks of district size was .663, *SD* = .167. The mean of the ratio of total EMH black students across all four ranks of district size was 2.504, *SD* = .713. The mean of the ratio of total EMH Hispanic students across all four ranks of district size was .860, *SD* = .809.

The test of within-subjects effects showed that *F* (1.697, 106.902) = 108.517, *p* = .000; therefore we reject the hypothesis, concluding that there is a statistically significant difference between the proportions of EMH whites, EMH blacks, and EMH Hispanics when school district size is measured. Of the variance in the repeated measure, 63.3% is explained by school district size. Pair-wise comparisons were also statistically significant between the means of the proportions of EMH whites and EMH blacks and between the means of the proportions of EMH blacks and EMH Hispanics. The plot in Figure 4 shows that the estimated marginal mean of the proportion for EMH whites fell gradually from .7 in small districts to .4 in very large districts. The estimated marginal mean of the proportion for EMH blacks gradually increased from 2.4 in small districts to 2.9 in large districts then fell to 2.1 in very large districts. The estimated marginal mean of the proportion for EMH Hispanics started at .9 in small districts and gradually fell to .6 in very large districts.

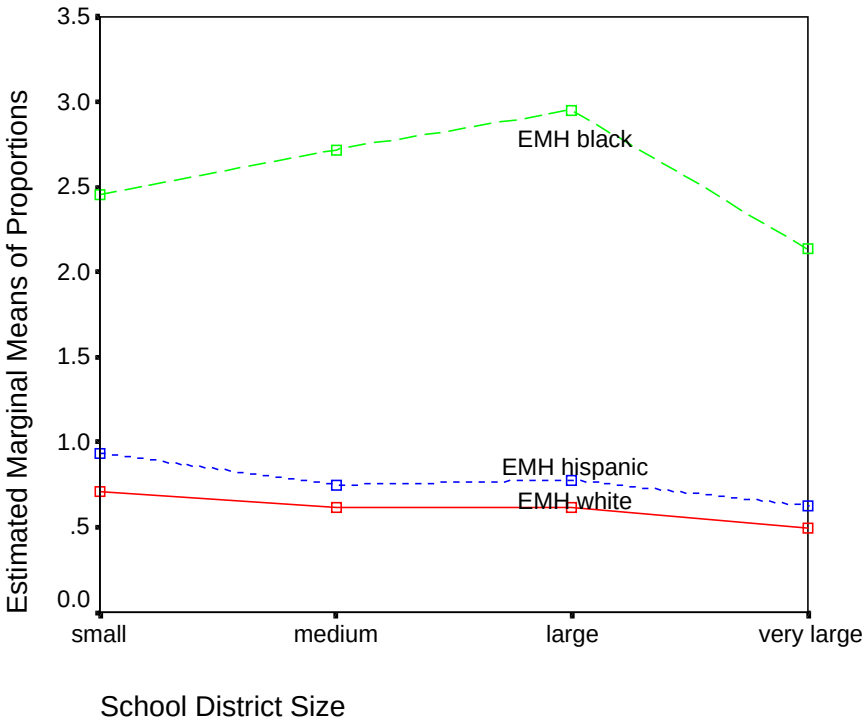

Figure 4: Plot for the Average Proportions of EMH Whites, EMH Blacks, and EMH Hispanics Within Four Ranks of Public School District Size

Racial Composition of Staff

The total, full-time, non-instructional staff for each school district was analyzed. (See Table 18 in Appendix.) White, full-time, non-instructional staff represented the majority of public school district staff in 64 of the 67 school districts. In only three districts did whites account for less than 50% of the total non-instructional staff. These districts were Gadsden (24.71%), Dade (26.31%), and Jefferson (40.93%). Black staffers represented 72.88% of the full-time, non-instructional staff in Gadsden and 59.07% in Jefferson. Hispanics made up 36.94% of full-time, non-instructional staff in Dade school district, followed closely by black staffers at 35.56%. The districts that had the highest percentage of white, full-time, non-instructional staff were Santa Rosa (95.12%), Lafayette (96.58%), and Holmes (99.54%).

Full-time, non-instructional staff within the 67 school districts was arbitrarily ranked based on the percentage of white, non-instructional staff to the total non-instructional staff because of their large representation within the majority of school districts. The ranking is shown in Table 9.

Table 9

School District Ranks Based on White, Full-Time Staff Within Public School Districts for School Year 2001–2002

Percentage of white, full-time staff members	Rank	# of public school districts
0.00–59.99	1	5
60.00–69.99	2	8
70.00–79.99	3	12
80.00–89.99	4	30
90.00–100.00	5	12

EMH whites, blacks, and Hispanics were then grouped in the staff-based ranks of the school districts. In other words, all EMH white students were grouped within these five ranks, all EMH black students were grouped within these five ranks, and all EMH Hispanic students were grouped within these five ranks. It was hypothesized that there would be no statistically significant difference between the proportions of whites, blacks, and Hispanics identified as EMH when school district white, full-time, non-instructional staff was measured.

A general linear model with repeated measures was used to analyze the data. A significance level of .05 was selected. The dependent variable was the proportions of EMH whites, EMH blacks, and EMH Hispanics. The independent variable was the rank of white, full-time, non-instructional staff within the school districts. The results of the test of within-subject effects are displayed in Table 4 above.

The results showed that the mean of the ratio of total EMH white students across all five ranks of district white, full-time, non-instructional staff was .663, *SD* = .167. The mean of the ratio of total EMH black students across all five ranks of school district white, full-time, non-instructional staff was 2.504, *SD* = .713. The mean of the ratio of total EMH Hispanic students across all five ranks of school district white, full-time, non-instructional staff was .860, *SD* = .809.

The test of within-subjects effects showed that F (1.655, 102.592) = 106.265, p = .000; therefore we reject the hypothesis, concluding that there is a statistically significant difference between the proportions of EMH whites, EMH blacks, and EMH Hispanics when school district white, full-time, non-instructional staff is measured. Of the variance in the repeated measure, 63.2% is explained by the percentage of white, full-time, non-instructional staff in public school districts. Pair-wise comparisons were also statistically significant between the means of the proportions of EMH whites and EMH blacks and between the means of the proportions of EMH blacks and EMH Hispanics. The plot in Figure 5 showed that the greatest estimated marginal means of the proportions of EMH whites and EMH Hispanics occurred where 90% or more of the full-time, non-instructional staff was white and for EMH blacks where 80% to 89% of the full-time, non-instructional staff was white. The estimated marginal means of the proportions of EMH whites and EMH Hispanics rose gradually through 60% to 89% of white, full-time, non-

instructional staff. However, the estimated marginal mean of the proportion of EMH Hispanics rose steeply between 89% to 100% of white, full-time, non-instructional staff to 1.33. The estimated marginal mean of the proportion of EMH whites continued its gradual rise between 89% to 100% of white, full-time, non-instructional staff .6. The estimated marginal mean of the proportion of EMH blacks declined between 89% to 100% of white, full-time, non-instructional staff, but was consistently greater than the estimated marginal means of the proportions of EMH whites and EMH Hispanics (2 to 3 times greater than the estimated marginal means of the proportions of EMH whites and EMH Hispanics).

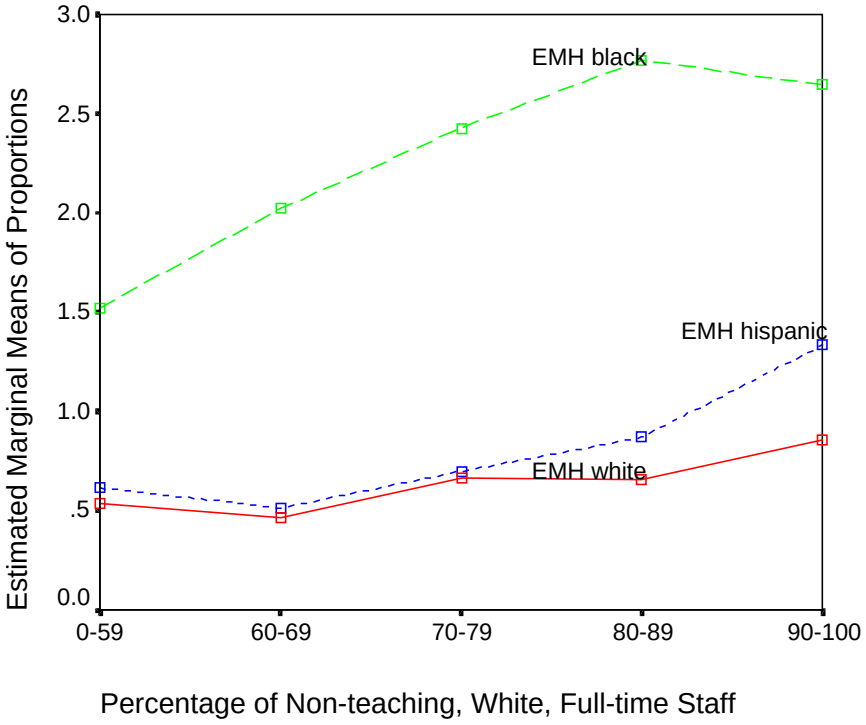

Figure 5: Plot for the Average Proportions of EMH Whites, EMH Blacks, and EMH Hispanics Within Five Ranks of White, Full-Time Staff in Public School Districts

Teachers' Degrees

Dade, Broward, and Hillsborough school districts had the largest number of teachers with bachelor's, master's, specialist, and doctoral degrees. The total number of bachelor's-level teachers in Dade school district totaled 10,941; master's-level teachers totaled 8,041; specialist-level teachers totaled 1,985; and doctoral-level teachers totaled 485. In contrast, the smallest school district, Lafayette, had 51 teachers with bachelor's degrees and 20 with master's degrees. No faculty had specialist or doctoral degrees in the Lafayette school district in the 2001–2002 school year. The percentage of teachers with a bachelor's degree was calculated for all 67 school districts by dividing the total number of teachers with a bachelor's degree by the total number of teachers for each school district, multiplied by 100. The percentages for the 67 school districts were then arranged in ascending order, arbitrarily ranked, and displayed in Table 10. (See also Table 19 in Appendix.)

Table 10

School District Ranks Based on the Percentage of Teachers With Bachelor's Degrees

Percentage of teachers with bachelor's degrees	Rank	# of public school districts
1.00–59.99	1	17
60.00–69.99	2	40
70.00 and above	3	10

EMH whites, blacks, and Hispanics were then grouped in the bachelor's degree–based ranks of the school districts. In other words, all EMH white students were grouped within these three ranks, all EMH black students were grouped within these three ranks, and all EMH Hispanic students were grouped within these three ranks. It was hypothesized that there would be no statistically significant difference between the proportions of whites, blacks, and Hispanics identified as EMH when the percentage of teachers with a bachelor's degree within the school districts was measured.

A general linear model with repeated measures was used to analyze the data. A significance level of .05 was selected. The dependent variable was the proportions of EMH whites, EMH blacks, and EMH Hispanics. The independent variable was ranks of teachers with a bachelor's degree. The results of the test of within-subject effects are displayed in Table 4 above.

The results showed that the mean of the ratio of total EMH white students across all three ranks of teachers with a bachelor's degree was .663, *SD* = .167. The mean of the ratio of total EMH black students across all three ranks of teachers with a bachelor's degree was 2.504, *SD* = .713. The mean of the ratio of total EMH Hispanic students across all three ranks of teachers with a bachelor's degree was .860, *SD* = .809.

The test of within-subjects effects showed that F (1.730, 110.694) = 137.456, p = .000; therefore we reject the hypothesis, concluding that there is a statistically significant difference between the proportions of EMH whites, EMH blacks, and EMH Hispanics when teachers' bachelor's degrees are measured. Of the variance in the repeated measure, 68.2% is explained by teacher bachelor's degree level within school districts. Pair-wise comparisons were also statistically significant between the means of the proportions of EMH whites and EMH blacks and between the means of the proportions of EMH blacks and EMH Hispanics. The plot in

Figure 6 demonstrated that the greatest estimated marginal mean of the proportion for EMH blacks occurs in school districts where the percentage of teachers with at least a bachelor's degree was between 1 and 59%. In other words, 40% of these teachers had degrees higher than a bachelor's degree. The estimated marginal mean decreased slightly between 59% and 69% and remained constant between 69% and 100%. The estimated marginal mean of the proportion for EMH whites was almost constant among the three grouped percentages of teachers with bachelor's degrees. However, the estimated marginal mean of the proportion for EMH Hispanics rose between 1% and 69% and leveled off between 69% and 100% of teachers with a bachelor's degree.

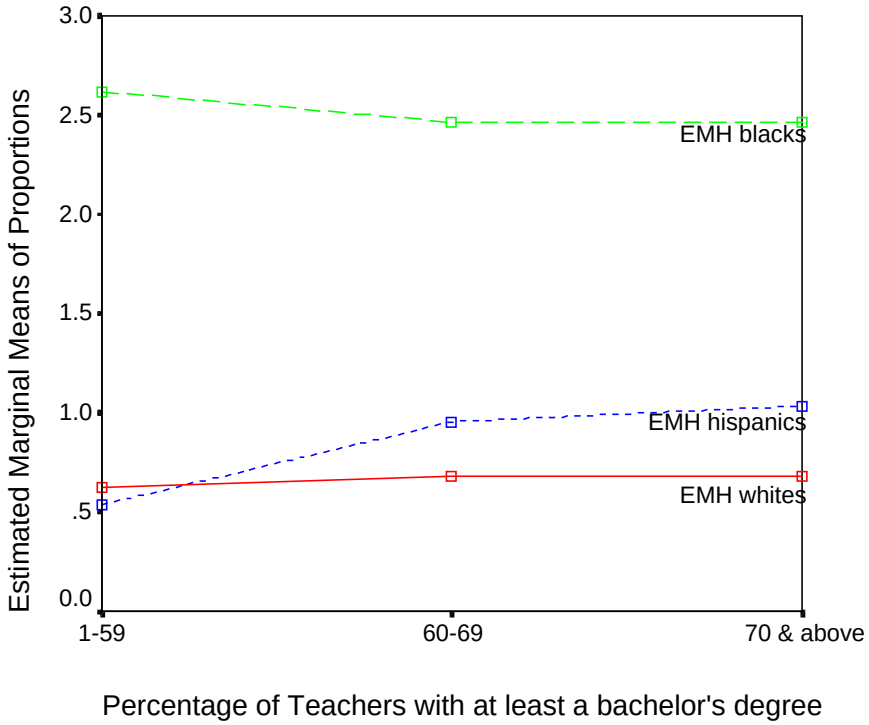

Figure 6: Plot for the Average Proportions of EMH Whites, EMH Blacks, and EMH Hispanics Within Three Ranks of Teachers With Bachelor's Degrees in Public School Districts

District Expenditure on Students

The school district expenditure per student is defined as the expense per full time equivalency or FTE for the 2001–2002 school year. Clay school district had the lowest FTE expense ($5,172) and Monroe had the highest ($6,858). (See Table 20 in Appendix.) The FTE for all 67 school districts was arranged in ascending order from the lowest to the highest, arbitrarily ranked, and displayed in Table 11.

Table 11

School District Rank Based on Full Time Equivalency (FTE) for School Year 2001–2002

FTE for school districts	Rank	# of public school districts
$5,000–$5,499	1	13
$5,500–$5,999	2	36
$6,000–$6,499	3	11
$6,500 and above	4	7

EMH whites, blacks, and Hispanics were then grouped in the FTE-based ranks of the school districts. In other words, all EMH white students were grouped within these four ranks, all EMH black students were grouped within these four ranks, and all EMH Hispanic students were grouped within these four ranks. It was hypothesized that there would be no statistically significant difference between the proportions of whites, blacks, and Hispanics identified as EMH when school district FTE was measured.

A general linear model with repeated measures was used to analyze the data. A significance level of .05 was selected. The dependent variable was the proportions of EMH whites, EMH blacks, and EMH Hispanics. The independent variable was the district rank of FTE. The results of the test of within-subject effects are displayed in Table 4 above.

The results showed that the mean of the ratio of total EMH white students across all four ranks of district FTE was .663, *SD* = .167. The mean of the ratio of total EMH black students across all four ranks of school district FTE was 2.504, *SD* = .713. The mean of the ratio of total EMH Hispanic students across all four ranks of school district FTE was .860, *SD* = .809.

The test of within-subject effects showed that F (1.711, 107.780) = 115.295, p = .000; therefore we reject the hypothesis, concluding that there is a statistically significant difference between the proportions of EMH whites, EMH blacks, and EMH Hispanics when school district FTE is measured. Of the variance in the repeated measure, 64.7% is explained by school district FTE. Pair-wise comparisons were also statistically significant between the means of the proportions of EMH whites and EMH blacks, EMH whites and EMH Hispanics, and EMH blacks and EMH Hispanics. The plot in Figure 7 demonstrated that the estimated marginal mean of the proportion for EMH whites remained consistent for all four ranks of FTE at about .6. The estimated marginal mean of the proportion for EMH blacks (2.8) peaked when FTE expense was less than $5,499 and gradually fell when FTE expense was between $5,500 and $6,500 and above. The estimated marginal mean of the proportion for EMH Hispanics started at 1.06 when FTE expense was less than $5,499, fell to .70 when FTE expense was less than $5,499, and gradually rose to 1.1 when FTE expense rose above $6,000.

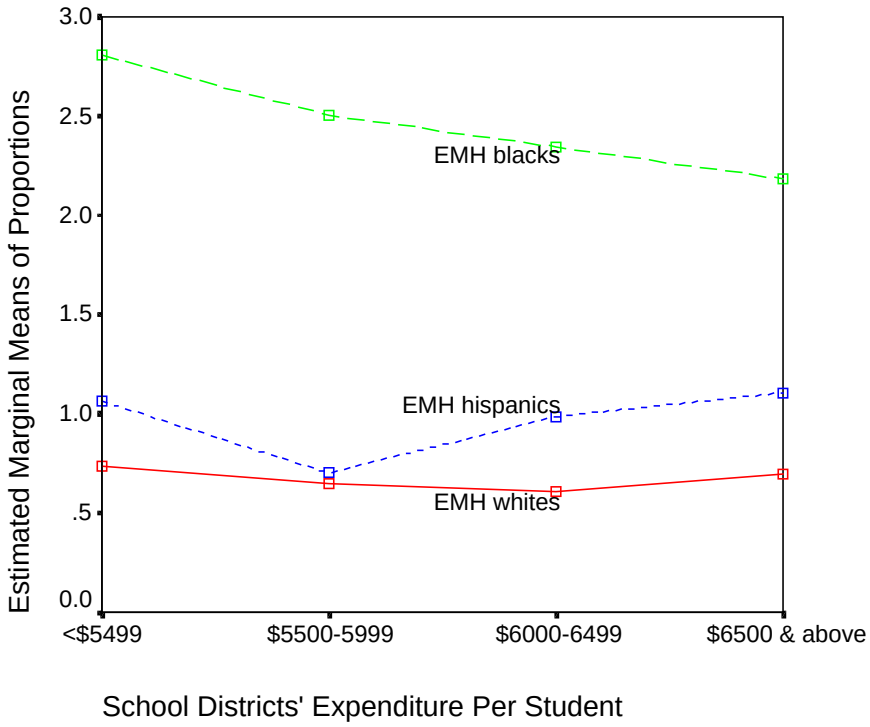

Figure 7: Plot for the Average Proportions of EMH Whites, EMH Blacks, and EMH Hispanics Within Four Ranks of Public School District FTE

Summary

This chapter has presented an analysis of data collected from the Florida Department of Education database for the school year 2001–2002. The data were analyzed using the statistical package SPSS-11 and results were provided. Findings and conclusions drawn from the data analysis and recommendations for reducing the overrepresentation of blacks in EMH are presented in Chapter 5, along with suggestions for further research.

CHAPTER 5

SUMMARY, CONCLUSIONS, IMPLICATIONS, AND RECOMMENDATIONS

Introduction

This chapter provides an overview of the problem statement, methodology, and data analysis. In addition, a summary and discussion of the findings regarding each research question is included, as well as conclusions drawn from the findings, related implications, recommendations for practice, and suggestions for future research.

Problem Statement

This study sought to investigate relevant data to see whether over-representation of black students existed in Florida's 67 public school districts in 2001–2002 and to analyze the effects of certain factors on the identification of black students as EMH.

Methodology

Population and Data Collection

Data were collected from the 67 public school districts in Florida over a one-year period, that is, school year 2001–2002, as reported to the Florida Department of Education database. The data were accessed through the DOE website. Data about district wealth, free and reduced lunch, teachers' professional degrees, the racial composition of school district staff, and school district population density (urbanicity) were also culled from DOE.

Data Analysis

Data analysis in this study was conducted using the statistical analysis software SPSS Version 11.0 for Windows. The data were entered into the SPSS database to create a platform for analysis. Data sorting and computational functions were used to develop several variables necessary for the analysis. The general linear model with repeated measures was the main model used in the analysis of the data. Plots were included in the analysis to provide a visual display of the findings for some of the research questions.

Summary and Discussion of Findings

The summary of findings and discussion of the data collected for the four research questions of this study are presented below.

Research Question 1

Is there an over-representation of black students in EMH in the 67 public school districts in Florida?

Total enrollment for students during the 2001–2002 school year was approximately 2.5 million students in the state of Florida. Whites, blacks, and Hispanics represented 51.4%, 24.5%, and 20.2%, respectively. The analysis showed that of the total enrollment in EMH in the 67 public school districts, whites, blacks, and Hispanics were 32.7%, 53.5%, and 12.4%, respectively. The statistical analyses showed that the percentage of black students in EMH was two times the percentage of black students in the general school enrollment in all 67 public school districts in Florida. The results of the analyses also demonstrated that blacks were identified as EMH 2.5 times more often than were whites and Hispanics. The identification of

whites and Hispanics as EMH did not differ significantly from each other. This breakdown would indicate that there is over-representation of black students in EMH in the 67 public school districts in Florida. These findings were consistent with the works of the Civil Rights Project (2002); Grossman (1998); Harry (1992); MacMillan and Reschly (1998); Noel and Fuller (1985); Oswald et al. (1999); and Zhang and Katsiyannis (2002). The report of the Civil Right Project indicated that between 2.75% and 5.41% of black students were labeled EMH. In Florida the number of blacks identified as EMH was more than three times that of white students.

MacMillan & Reschly, among others, found that blacks and Hispanics tend to be over-represented in EMH programs in school districts with high proportions of linguistically diverse minorities or poor individuals. Overall, in Florida during the 2001–2002 school year, approximately 25% of the general student enrollment was black, and 20% was Hispanic. Thirty-eight percent of black students were on free/reduced lunch, indicating a high level of poverty among blacks within the state school system. These facts might predispose the over-representation of blacks in EMH in Florida.

Research Question 2

Does the socioeconomic status of school districts affect the proportions of white, black, and Hispanic students identified as EMH?

In 1994, Artiles and Trent reported that low socioeconomic status and environmental deprivation were persistently linked to EMH identification. Socioeconomic status, as defined by the percentage of students on free/reduced lunch within school districts, was a variable that was analyzed to see its impact on the proportions of white, black, and Hispanic students identified as EMH. The results of the analyses indicated that there was a statistically significant difference in

the proportions of white, black, and Hispanic students identified as EMH when the socioeconomic status of the school districts was measured. Almost 70% of this difference between these three groups was explained by the socioeconomic status of school districts.

Oswald et al. (1999) found a positive relationship between poverty and disproportionate representation of blacks in EMH. That is, the higher the socioeconomic status, the higher the EMH rates for blacks. Conversely, the lower the socioeconomic status, the lower the EMH rates for blacks. The results of the analysis for Florida public school districts showed that in high SES districts (with less than 39% of students on free/reduced lunch), black students were found to be eligible for EMH at almost three times the rate of white and Hispanic students. However, in low SES school districts, (when 60% or more of the students were on free/reduced lunch), blacks were found to be eligible for EMH about 1.5 times the rate of white students and 0.5 times the rate of Hispanic students. This research, therefore, confirmed the findings of Oswald et al. (1999). The data analysis also indicated that a greater proportion of Hispanic students seem to be identified as EMH as the percentage of students receiving free/reduced lunch increases to 60% or more of the total school district's student enrollment.

The findings of this research also indicated that in wealthy school districts (as signaled by a lower percentage of students on free/reduced lunch, or by an indicator of high socioeconomic status, such as higher per-pupil expenditures), blacks are identified as EMH twice as often as whites or Hispanics. In poorer districts (lower socioeconomic status school districts), blacks are identified about one-and-one-half times as often as whites and Hispanics. These findings appear similar to those of Artiles and Trent (1994). Jensen (1969), Monson (2003), Oswald et al. (1999), Valencia and Suzuki (2001), and Yeargin-Allsopp et al. (1995) all shared the opinion that poverty and malnutrition are possible causes of EMH. Jensen and Valencia and Suzuki implied

that one's IQ has a major impact on one's socioeconomic status. Socioeconomic status, as defined by the percentage of students on free/reduced lunch, is therefore significantly aligned with identification of students into EMH.

Research Question 3

Does the wealth of school districts affect the proportions of white, black, and Hispanic students identified as EMH?

The analyses showed that there was a statistically significant difference between the proportions of white, black, and Hispanic students identified as EMH when school district wealth was measured. Six percent of the difference between the proportions of white, black, and Hispanic students identified as EMH was explained by the wealth of the school districts. In poor districts, blacks were three times more likely than whites or Hispanics to be identified as EMH. In wealthy districts, blacks were four times more likely than whites to be identified as EMH, and Hispanics were two times more likely than whites to be identified as EMH. These findings are supported by research from the Civil Rights Project (2002) and from Valencia and Suzuki (2001), which found that black and Hispanic children and linguistically diverse students were more likely to be identified as EMH in wealthier school districts.

Research Question 4

How do the characteristics of the public school districts (urbanicity, size of districts based on student enrollment, racial composition of full-time, non-instructional staff, percentage of teachers with a bachelor's degree, district expenditure per student) affect the proportions of white, black, and Hispanic students identified as EMH?

Urbanicity

The majority of students in Florida public school districts attend schools in the five largest metropolitan areas. Broward, Dade, Duval, Hillsborough, and Orange school districts include the cities of Fort Lauderdale, Miami, Jacksonville, Tampa, and Orlando respectively. In the 25 largest school systems in the nation, including Miami-Dade, black children and other minorities made up the majority of student enrollments (Agbenyega & Jiggetts, 1999). One would therefore assume that population density or urbanicity would affect the proportions of white, black, and Hispanic students identified as EMH.

The analyses from the Florida school districts' data showed that there was a statistically significant difference between the proportions of white, black, and Hispanic students identified as EMH when urbanicity was measured. Fifty-nine percent of the difference in the proportions of white, black, and Hispanic students identified as EMH was explained by the population density or urbanicity of school districts. In urban and rural school districts, blacks were one-and-one-half times more likely than whites and Hispanics to be identified as EMH. In suburban school districts, blacks were two times more likely than whites and Hispanics to be identified as EMH. These findings are supported by Agbenyega and Jiggetts (1999), Benner (1998), Hilton (1991), Oswald et al. (1999), and Sherman (1992).

It is also not surprising that the identification of blacks as EMH is greatest in suburban school districts, when one considers that suburban school districts are usually wealthier and have a higher socioeconomic status. In the previous research questions, it was shown that blacks have a greater tendency than whites and Hispanics to be over-identified in wealthier and higher socioeconomic status school districts.

School District Size

The results from the analyses showed that there was a statistically significant difference between the proportions of white, black, and Hispanic students identified as EMH when school district size was taken into account. Sixty-three percent of the difference between the proportions of white, black, and Hispanic students identified as EMH was explained by school district size. While blacks were one-and-one-half times more likely than whites and Hispanics to be identified as EMH in small, medium, and very large districts, they were two times more likely than whites and Hispanics to be identified as EMH in large school districts, that is, in school districts with 60,000 to 89,000 students. These findings are similar to those of Agbenyega and Jiggetts (1999), Civil Rights Project (2002), and Oswald et al. (1999).

There is a strong possibility that large schools exist in large school districts where black students might be overlooked or overshadowed. Payne (2001) suggested that a possible winning strategy to promote learning and reduce the likelihood for over-identification for these students would include developmental preschool programs, supplemental reading programs such as Accelerated Reading (AR), smaller class size, and school-wide projects in prevention and support. Also, she strongly suggested parental training that would assist parents in the provision of insistence, expectations, and support for their children at home.

Racial Composition of Staff

The results from the analyses showed that there was a statistically significant difference between the proportions of white, black, and Hispanic students identified as EMH when racial composition of full-time, non-instructional staff within the districts was taken into account.

Sixty-three percent of the difference between the proportions of white, black, and Hispanic students identified as EMH was explained by the percentage of white, full-time, non-instructional staff. In school districts with approximately 40% of their full-time, non-instructional staff consisting of black, Hispanic or other minority staff, blacks were one time more likely than whites and Hispanics to be identified as EMH. As the percentage of white, full-time, non-instructional staff increased, the tendency for blacks to be identified as EMH also increased. When the percentage of white, full-time, non-instructional staff is greater than 80% of school districts total staff, blacks are three times more likely than whites and two times more likely than Hispanics to be identified as EMH. Several researchers have argued for greater diversity among educators and those working with students or greater awareness of cultural diversity in order for staff to understand the cultures of other races (Gay, 1994; Patrick, 1986; So, 1987; Valles, 1998).

Gay (1994) posited that despite pluralism in the U.S., most people live in relatively isolated enclaves and do not necessarily interact with each other on substantive levels. Thus awareness and sensitivity training are both necessary to bridge misunderstandings that tend to exist among racial groups of students and staff.

Teachers' Degrees

The results from the analyses showed that there was a statistically significant difference between the proportions of white, black, and Hispanic students identified as EMH when teachers' bachelor's degrees were taken into account. Sixty-eight percent of the difference between the proportions of white, black, and Hispanic students identified as EMH was explained by the percentage of teachers holding a bachelor's degree. Blacks were three times more likely

than whites to be identified as EMH for all percentages of teachers holding a bachelor's degree. However, while blacks were more likely to be identified EMH than were Hispanics, the tendency for Hispanics to be identified as EMH gradually increased as the percentage of bachelor's degreed teachers increased. In other words, when more than 60% of teachers have only a bachelor's degree, Hispanics were one time more likely than whites to be identified as EMH. These findings support earlier research of Benner (1998), Bernal and Bernal (1974), Coutinho et al. (1999), and Grossman (1995, 1998).

Grossman and others have opined that regular education teachers might have low expectations for their students, so when students fail to behave appropriately or are not learning adequately, teachers might be quick to refer them for assessment. This might be a contributing factor of the high rate of black and Hispanic students being identified when the percentage of teachers with a bachelor's degree is above the 60% level in school districts. Coutinho et al. posited that some teachers might be incorrectly referring black students who are not disabled but who behave, attend, or learn differently than white, middle-class students. In these cases, differences in behavior or learning may be interpreted as suspicion for EMH rather than acknowledged as cultural differences. These cultural conflicts could jeopardize the instructional process, cause students to be misclassified, and cause teachers erroneously to conclude that black students have limited critical thinking and reasoning abilities (Gay, 1994).

Grossman (1998) and Samuda et al. (1989) alluded to the fact that some teachers might have low expectations for black and Hispanic students. This low expectation might also be a factor relating to the over-identification of blacks and Hispanics in EMH when the percentage of teachers with a bachelor's degree is above the 60% threshold. While this tendency does not imply that all teachers with a bachelor's degree have low expectations for their black and

Hispanic students, one might conclude that teachers with higher degrees than the bachelor's might have more skills to assist their students in achieving at higher academic levels.

District Expenditures on Students (FTE)

The results from the analyses showed that there was a statistically significant difference between the proportions of white, black, and Hispanic students identified as EMH when school district expenditure or FTE was taken into account. Approximately 65% of the difference between the proportions of white, black, and Hispanic students identified as EMH was explained by school district FTE. When FTE is less than $5,499, blacks were four times more likely than whites and two times more likely than Hispanics to be identified as EMH. As FTE increased, the tendency for blacks to be identified as EMH over whites and Hispanics decreased. So, when FTE was $6,500 or more, blacks were three times more likely than whites and one time more likely than Hispanics to be identified as EMH. Hispanics, on the other hand, were one time more likely than whites to be identified as EMH as FTE increased to $6,500 or more. These findings are consistent with Coutinho et al., who found a significant, albeit weak, negative relationship between school district student expenditure (FTE) and disproportionate identification of EMH among blacks.

Conclusions

This study sought to analyze the apparent over-representation of blacks in EMH within the 67 public school districts in Florida. From a review of literature and research findings, it was concluded that:

1. There is an over-representation of blacks in EMH within the 67 public school districts in Florida. Black students were identified as EMH 2.5 times more often than whites and Hispanics.
2. Socioeconomic status of school districts in Florida had a significant effect on the proportional identification of black students as EMH. When the school districts have a high socioeconomic status in which 39% or less of their students are on free/reduced lunch, there is a greater likelihood that a larger proportion of black students will be identified as EMH.
3. As wealth of the school districts rise, there is a significant likelihood that the proportion of black students identified as EMH would also rise.
4. Urbanicity has a major, significant impact on students being identified into EMH. Black students have a greater likelihood of being identified as EMH in suburban schools.
5. Blacks are over-identified in school districts that have 60,000 to 89,000 students.
6. When there is a high percentage (80% or more) of white, full-time, non-instructional staff in school districts, blacks have a greater likelihood of being over-identified as EMH.
7. Blacks were three times more likely to be identified as EMH regardless of the type of degrees teachers had.
8. When district expenditure per student (FTE) was less than $5,499, blacks were four times more likely than whites to be identified as EMH. As FTE increased, the tendency for over-identification of blacks as EMH decreased.

9. In every variable or measure analyzed, the proportion of black students identified as EMH was significantly over-identified when compared to the proportions of white and Hispanic students identified as EMH.

Implications and Recommendations for Practice

The following improvements, based on the review of research, conclusions, and limitations of this study, are recommended:

1. Since over-representation of blacks in EMH is occurring in Florida schools, districts should seek to review and revise policies, procedures, and practices currently being used in the identification and placement of blacks in EMH to ensure that these policies, procedures, and practices comply with requirements of IDEA. The pre-referral and referral processes need to be evaluated to ensure that biases and misunderstanding of cultures are not affecting the decision-making processes regarding identification of blacks as EMH.
2. The use of assessment techniques that are less culturally loaded should become more widespread, especially among blacks who are more prone to be identified as EMH when traditional assessment protocols are used. Two verbal psychological assessment protocols, the CAS and the DAS, and several nonverbal psychological batteries appear to hold promise in assessing black students more fairly than some of the traditional protocols. Other methods of assessment such as portfolio evaluations, performance-based testing, and the PASS model deserve trial with black students.
3. Efforts should be made with detection and early intervention techniques to identify black students who are at risk for becoming EMH, especially in high socioeconomic

status and wealthy school districts. These students and their families should be assisted with early reading programs and stimulating environments that are culturally diverse and enriching to give students a greater opportunity for learning and becoming academically successful.

4. In suburban school districts, diversity in the racial composition of teachers and staff should be encouraged to develop greater cultural awareness for black and Hispanic students. Professional development regarding cultural diversity could also be implemented among teachers and staff to help foster understanding of the mores and values of other cultures within those school districts. Professional development would have to take into consideration needs assessments of the districts. Attitude surveys and focus groups could be useful tools to build awareness for school personnel. Different individuals representative of the diverse cultures from the community of the school districts could be guest speakers at school events and could share their life stories and cultural experiences to increase empathy and understanding for different races within the school system.
5. Incorporation of multicultural education principles could assist regular and special education teachers and many non-instructional staff members in mostly white school districts understand black students better. Curriculum and classroom management strategies could be adopted to include diversity and culturally relevant modalities and strategies that could assist teachers in their delivery to black and Hispanic students. The acquisition of cultural and linguistic knowledge and new perceptions and practices might help teachers make fewer referrals of black children for EMH services and therefore reduce the disproportion of blacks in EMH.

6. The use of observation and feedback during the teacher evaluation process to determine teacher treatment or attitudes towards individual students and student groups could be implemented as a gauge to measure effectiveness of professional development as it relates to multiculturalism, awareness, and sensitivity to cultural diversity.

Recommendations for Future Research

This study analyzed the apparent over-representation of blacks in EMH within the 67 public school districts in Florida. The following suggestions are made for further research:

1. Further research into the identification of other races in EMH within school districts in Florida would examine whether over-representation or under-representation is occurring.
2. A comparative review of other types of student identification such as emotional handicap and specific learning disability among blacks and other racial groups would provide information on districts' accountability and practices in light of IDEA's requirements.
3. A qualitative, in-depth study of the pre-referral and referral processes could determine possible biases that might be influencing the identification of students as EMH.
4. Comparative research is needed within school districts that use non-traditional assessment protocols with black and Hispanic students for identification as EMH.
5. A study of white, full-time, non-instructional staff of school districts on a national level would seek to determine this factor's effects on black and Hispanic students

identified as EMH. The results of this study could refute or substantiate this finding and offer further suggestions to address this issue.

6. An analysis of predominantly urban school districts with a high percentage of black teachers and black and Hispanic staff could be undertaken to measure the effects of these factors on the identification of different races of students into EMH or into other areas of special education.
7. This study could be replicated in other southern states that have a greater number of school districts. This could be done to examine the relationships of urbanicity and district size to over-representation of blacks identified as EMH.
8. A study could be conducted to examine the relationship of literacy-rich home environments to poverty and the identification of blacks as EMH.

APPENDIX

DATABASE TABLES

Table 12

Racial Composition of Students in General and EMH Enrollment (Numbers)

	General Enrollment			EMH Enrollment		
School district	Whites	Blacks	Hispanics	Whites	Blacks	Hispanics
Alachua	15889	10981	1253	79	216	10
Baker	3754	691	20	39	25	1
Bay	20551	4073	417	157	93	5
Bradford	2990	1009	51	61	66	3
Brevard	55118	9971	3485	325	316	23
Broward	100604	94133	54698	376	1393	202
Calhoun	1825	305	39	35	20	0
Charlotte	14478	1456	723	123	21	4
Citrus	13578	697	489	188	28	1
Clay	24045	2876	1114	194	51	8
Collier	19425	4162	11961	94	105	103
Columbia	6759	2264	250	130	119	3
Dade	39832	112827	214334	109	1602	1080
De Soto	2597	941	1127	18	39	9
Dixie	2023	208	16	48	18	2
Duval	61187	54360	5190	409	1388	32
Escambia	25441	16375	743	164	358	3
Flagler	5479	949	415	27	15	1
Franklin	1188	233	11	25	10	1
Gadsden	425	6263	673	13	194	9
Gilchrist	2476	135	41	38	8	0
Glades	500	276	304	7	9	3
Gulf	1788	393	12	12	21	0
Hamilton	943	1041	156	18	65	0
Hardee	2151	434	2155	37	15	61
Hendry	2807	1345	3227	31	63	43
Hernando	14901	1330	1219	87	32	11
Highlands	6603	2314	2082	77	90	47
Hillsborough	82470	39555	37982	627	1236	343
Holmes	3333	106	51	106	6	0
Indian River	10725	2599	1650	58	89	16
Jackson	4624	2363	134	87	181	3
Jefferson	497	1185	15	12	91	1
Lafayette	798	119	103	11	5	4
Lake	22295	4939	2725	282	288	41
Lee	38543	9301	10665	195	207	67
Leon	17454	12564	616	83	393	1
Levy	4880	1062	229	80	59	1
Liberty	1066	193	36	28	15	2

	General Enrollment			EMH Enrollment		
School district	Whites	Blacks	Hispanics	Whites	Blacks	Hispanics
Madison	1417	1954	49	30	162	1
Manatee	24825	6535	6041	151	210	98
Marion	26485	8275	3414	302	357	45
Martin	12322	1751	2243	58	63	49
Monroe	6125	835	1947	41	37	28
Nassau	9134	1025	132	105	30	0
Okaloosa	23851	3862	1078	176	129	6
Okeechobee	4564	647	1507	68	37	23
Orange	66066	45073	38087	609	1730	437
Osceola	17371	3529	14840	190	113	182
Palm Beach	74735	46830	29736	372	932	226
Pasco	44728	2068	4216	468	79	52
Pinellas	80370	21505	6357	497	646	47
Polk	50033	18707	10648	676	837	134
Putnam	7873	3390	1131	74	94	12
St. Johns	17822	2115	475	110	109	4
St. Lucie	17027	9000	3573	115	350	43
Santa Rosa	20780	1281	431	173	43	7
Sarasota	29103	3518	2955	119	77	12
Seminole	41663	8525	8371	151	189	55
Sumter	4458	1431	401	65	79	3
Suwannee	4372	1088	249	87	82	6
Taylor	2688	848	30	31	21	0
Union	1713	367	36	15	14	1
Volusia	44803	9494	6087	329	344	57
Wakulla	4009	550	42	52	24	0
Walton	5211	528	120	67	32	1
Washington	2641	625	32	29	21	0

Table 13

Racial Composition of Students in Total Enrollment and EMH Enrollment (Percentages)

School district	White percent of total enrollment	White percent of total EMH	Black percent of total enrollment	Black percent of total EMH	Hispanic percent of total enrollment	Hispanic percent of total EMH
Alachua	53.68	25.24	37.10	69.01	4.23	3.19
Baker	83.61	60.00	15.39	38.46	0.45	1.54
Bay	78.94	59.92	15.65	35.50	1.60	1.91
Bradford	73.00	46.92	24.63	50.77	1.25	2.31
Brevard	76.85	47.94	13.90	46.61	4.86	3.39
Broward	38.39	18.73	35.92	69.37	20.87	10.06
Calhoun	82.50	63.64	13.79	36.36	1.76	0.00
Charlotte	83.68	82.55	8.42	14.09	4.18	2.68
Citrus	89.21	86.24	4.58	12.84	3.21	0.46
Clay	82.88	74.90	9.91	19.69	3.84	3.09
Collier	53.26	30.62	11.41	34.20	32.79	33.55
Columbia	70.70	50.98	23.68	46.67	2.62	1.18
Dade	10.63	3.87	30.10	56.95	57.19	38.39
De Soto	55.09	27.27	19.96	59.09	23.91	13.64
Dixie	89.36	69.57	9.19	26.09	0.71	2.90
Duval	48.21	22.06	42.83	74.87	4.09	1.73
Escambia	56.98	30.89	36.68	67.42	1.66	0.56
Flagler	76.69	61.36	13.28	34.09	5.81	2.27
Franklin	82.39	69.44	16.16	27.78	0.76	2.78
Gadsden	5.72	5.99	84.28	89.40	9.06	4.15
Gilchrist	92.77	82.61	5.06	17.39	1.54	0.00
Glades	45.50	36.84	25.11	47.37	27.66	15.79
Gulf	80.61	36.36	17.72	63.64	0.54	0.00
Hamilton	43.82	21.69	48.37	78.31	7.25	0.00
Hardee	44.98	32.74	9.08	13.27	45.06	53.98
Hendry	37.01	22.46	17.73	45.65	42.55	31.16
Hernando	83.06	65.41	7.41	24.06	6.80	8.27
Highlands	58.42	35.81	20.47	41.86	18.42	21.86
Hillsborough	48.60	27.89	23.31	54.98	22.38	15.26
Holmes	94.23	94.64	3.00	5.36	1.44	0.00
Indian River	69.57	35.37	16.86	54.27	10.70	9.76
Jackson	63.25	31.52	32.32	65.58	1.83	1.09
Jefferson	29.08	11.54	69.34	87.50	0.88	0.96
Lafayette	77.48	55.00	11.55	25.00	10.00	20.00
Lake	72.80	45.85	16.13	46.83	8.90	6.67
Lee	63.54	40.88	15.33	43.40	17.58	14.05
Leon	54.88	17.26	39.51	81.70	1.94	0.21

School district	White percent of total enrollment	White percent of total EMH	Black percent of total enrollment	Black percent of total EMH	Hispanic percent of total enrollment	Hispanic percent of total EMH
Levy	78.04	57.14	16.98	42.14	3.66	0.71
Liberty	80.70	62.22	14.61	33.33	2.73	4.44
Madison	41.20	15.46	56.82	83.51	1.42	0.52
Manatee	64.90	32.20	17.08	44.78	15.79	20.90
Marion	67.36	42.60	21.05	50.35	8.68	6.35
Martin	73.39	34.12	10.43	37.06	13.36	28.82
Monroe	66.10	38.68	9.01	34.91	21.01	26.42
Nassau	87.53	76.64	9.82	21.90	1.26	0.00
Okaloosa	77.29	55.00	12.52	40.31	3.49	1.88
Okeechobee	65.99	51.91	9.36	28.24	21.79	17.56
Orange	42.11	21.66	28.73	61.54	24.27	15.55
Osceola	46.02	38.00	9.35	22.60	39.32	36.40
Palm Beach	46.75	24.03	29.29	60.21	18.60	14.60
Pasco	84.98	76.47	3.93	12.91	8.01	8.50
Pinellas	70.35	40.77	18.82	52.99	5.56	3.86
Polk	61.65	40.75	23.05	50.45	13.12	8.08
Putnam	62.34	40.66	26.84	51.65	8.96	6.59
St. Johns	85.20	49.11	10.11	48.66	2.27	1.79
St. Lucie	55.73	22.42	29.46	68.23	11.69	8.38
Santa Rosa	89.46	76.55	5.51	19.03	1.86	3.10
Sarasota	78.55	56.67	9.50	36.67	7.98	5.71
Seminole	66.43	36.30	13.59	45.43	13.35	13.22
Sumter	69.90	43.92	22.44	53.38	6.29	2.03
Suwannee	75.42	49.71	18.77	46.86	4.30	3.43
Taylor	74.07	59.62	23.37	40.38	0.83	0.00
Union	80.42	50.00	17.23	46.67	1.69	3.33
Volusia	71.87	44.46	15.23	46.49	9.76	7.70
Wakulla	85.66	67.53	11.75	31.17	0.90	0.00
Walton	87.32	65.69	8.85	31.37	2.01	0.98
Washington	78.30	58.00	18.53	42.00	0.95	0.00

Table 14

Proportion of White, Black, and Hispanic Students Identified as EMH for 67 School Districts

School district	Proportion of EMH white	Proportion of EMH black	Proportion of EMH Hispanic
Alachua	0.64	2.06	1.85
Baker	0.79	2.65	0.00
Bay	0.90	1.99	0.80
Bradford	0.80	1.73	0.00
Brevard	0.86	3.45	1.67
Broward	0.63	2.90	0.75
Calhoun	0.71	3.22	0.54
Charlotte	0.31	2.07	0.11
Citrus	0.62	3.05	0.79
Clay	0.55	3.34	0.99
Collier	0.62	3.35	0.70
Columbia	0.80	2.57	0.39
Dade	0.88	2.23	0.00
De Soto	0.58	4.81	0.79
Dixie	0.50	2.62	1.32
Duval	0.58	2.82	0.69
Escambia	0.49	1.93	0.48
Flagler	0.59	3.87	1.26
Franklin	0.51	3.22	0.91
Gadsden	0.46	3.55	2.16
Gilchrist	0.72	3.86	0.72
Glades	0.71	2.16	2.00
Gulf	0.77	2.28	1.63
Hamilton	0.62	2.71	1.97
Hardee	0.77	2.64	0.00
Hendry	0.89	3.44	0.00
Hernando	0.74	2.27	0.00
Highlands	1.00	1.79	0.00
Hillsborough	0.72	2.50	3.45
Holmes	0.66	2.50	0.80
Indian River	0.73	2.48	0.20
Jackson	0.79	3.02	0.81
Jefferson	0.50	2.03	0.59
Lafayette	0.72	1.97	0.45
Lake	0.63	2.38	0.32
Lee	0.61	2.04	1.19
Leon	0.79	3.25	1.22
Levy	0.76	2.27	1.19

School district	Proportion of EMH white	Proportion of EMH black	Proportion of EMH Hispanic
Liberty	0.47	1.86	0.75
Madison	0.40	2.32	0.72
Manatee	0.83	2.42	0.93
Marion	0.63	2.39	0.73
Martin	0.54	1.84	0.34
Monroe	0.90	3.29	1.06
Nassau	0.66	2.19	0.62
Okaloosa	0.46	1.75	0.42
Okeechobee	0.57	2.36	0.68
Orange	0.36	1.89	0.67
Osceola	0.45	3.59	0.00
Palm Beach	0.97	2.80	0.14
Pasco	0.99	1.67	0.64
Pinellas	0.51	2.14	0.64
Polk	0.51	2.06	0.78
Putnam	0.75	3.55	0.49
St. Johns	0.57	3.00	1.02
St. Lucie	0.64	2.83	0.80
Santa Rosa	0.40	1.26	1.10
Sarasota	0.78	2.84	4.10
Seminole	0.38	1.47	0.36
Sumter	0.50	2.96	0.57
Suwannee	1.05	1.06	0.46
Taylor	0.61	2.57	0.73
Union	0.49	1.62	0.00
Volusia	0.73	1.46	1.20
Wakulla	0.65	1.92	0.74
Walton	0.81	1.89	0.57
Washington	0.84	1.72	3.64

Table 15

Percentage of Students on Free/Reduced Lunch for the 67 School Districts for School Year 2001–2002

School district	Total on free/ reduced lunch	Percent of students on free/ reduced lunch	Total enrollment
St. Johns	4330	20.70%	20918
Clay	6562	22.62%	29013
Bradford	1054	25.73%	4096
Seminole	16492	26.30%	62718
Okaloosa	8487	27.50%	30858
Leon	9502	29.88%	31802
Brevard	22186	30.94%	71718
Martin	5206	31.01%	16790
Santa Rosa	7346	31.63%	23228
Wakulla	1496	31.97%	4680
Flagler	2313	32.38%	7144
Nassau	3535	33.88%	10435
Monroe	3176	34.28%	9266
Sarasota	12719	34.33%	37048
Pinellas	39553	34.62%	114251
Taylor	1322	36.43%	3629
Manatee	13944	36.45%	38250
Broward	98201	37.48%	262027
Volusia	23380	37.50%	62339
Indian River	5935	38.50%	15417
Lake	12098	39.50%	30626
Hernando	7190	40.08%	17939
Palm Beach	64291	40.22%	159862
Baker	1843	41.05%	4490
Citrus	6296	41.36%	15221
Charlotte	7187	41.54%	17302
Union	906	42.54%	2130
Lee	26135	43.08%	60661
Orange	68478	43.64%	156905
Collier	15924	43.66%	36475
Alachua	13023	44.00%	29599
Pasco	23361	44.39%	52632
Bay	11575	44.46%	26033
Liberty	597	45.19%	1321
Duval	58184	45.84%	126919

School district	Total on free/ reduced lunch	Percent of students on free/ reduced lunch	Total enrollment
Osceola	17639	46.73%	37744
Hillsborough	79929	47.11%	169682
Calhoun	1072	48.46%	2212
Suwannee	2839	48.97%	5797
Lafayette	526	51.07%	1030
Marion	20175	51.31%	39319
St. Lucie	15738	51.51%	30552
Gulf	1146	51.67%	2218
Walton	3104	52.01%	5968
Columbia	5004	52.34%	9560
Polk	42543	52.42%	81163
Jackson	3857	52.76%	7311
Okeechobee	3665	52.99%	6916
Washington	1801	53.39%	3373
Gilchrist	1472	55.15%	2669
Escambia	24804	55.55%	44648
Levy	3503	56.02%	6253
Highlands	6367	56.33%	11303
Holmes	2031	57.42%	3537
Sumter	3714	58.23%	6378
Dade	222928	59.48%	374806
De Soto	2887	61.24%	4714
Putnam	7754	61.40%	12629
Franklin	893	61.93%	1442
Glades	685	62.33%	1099
Dixie	1440	63.60%	2264
Hendry	4953	65.31%	7584
Madison	2310	67.17%	3439
Jefferson	1217	71.21%	1709
Hamilton	1555	72.26%	2152
Hardee	3551	74.26%	4782
Gadsden	5694	76.62%	7431

Table 16

School District Ranks Based on Wealth

School district	Wealth ($)	Category	Rank
Union	76381	Poor	1
Holmes	82601	Poor	1
Baker	87913	Poor	1
Liberty	102759	Poor	1
Calhoun	111121	Poor	1
Madison	111732	Poor	1
Gadsden	119713	Poor	1
Gilchrist	126652	Poor	1
Wakulla	127212	Poor	1
Jackson	129929	Poor	1
Bradford	130883	Poor	1
Dixie	135826	Poor	1
Suwannee	138245	Poor	1
Lafayette	144127	Poor	1
Washington	146166	Poor	1
Columbia	153413	Poor	1
Okeechobee	162021	Poor	1
Levy	173632	Poor	1
Clay	178374	Poor	1
De Soto	182670	Poor	1
Hendry	197770	Poor	1
Jefferson	198733	Poor	1
Putnam	202343	Middle	2
Escambia	203828	Middle	2
Santa Rosa	217306	Middle	2
Marion	220936	Middle	2
Polk	221541	Middle	2
Taylor	226216	Middle	2
Hamilton	226376	Middle	2
Pasco	232981	Middle	2
Hardee	236242	Middle	2
Alachua	241613	Middle	2
Highlands	270607	Middle	2
Hillsborough	273193	Middle	2
Brevard	274626	Middle	2
Bay	275615	Middle	2
Duval	276296	Middle	2
Sumter	277204	Middle	2
Okaloosa	288806	Middle	2

School district	Wealth ($)	Category	Rank
Osceola	291582	Middle	2
Leon	293582	Middle	2
Hernando	294319	Middle	2
Seminole	294994	Middle	2
Lake	306076	Middle	2
Volusia	307767	Middle	2
St. Lucie	309662	Middle	2
Dade	311996	Middle	2
Broward	355489	Upper Middle	3
Orange	373710	Upper Middle	3
Glades	385313	Upper Middle	3
Nassau	389254	Upper Middle	3
Citrus	390824	Upper Middle	3
Pinellas	398440	Upper Middle	3
Manatee	425370	Upper Middle	3
Gulf	494321	Upper Middle	3
St. Johns	521559	Upper Middle	3
Flagler	524353	Upper Middle	3
Charlotte	548088	Upper Middle	3
Palm Beach	551656	Upper Middle	3
Lee	608305	Wealthy	4
Indian River	618189	Wealthy	4
Martin	713531	Wealthy	4
Sarasota	806073	Wealthy	4
Franklin	812392	Wealthy	4
Walton	907151	Wealthy	4
Collier	1083239	Wealthy	4
Monroe	1368044	Wealthy	4

Table 17

Population Density (Urbanicity) and District Size

School district	Urbanicity	Total enrollment	School size
Lafayette	Rural	1030	Small
Glades	Rural	1099	Small
Liberty	Rural	1321	Small
Franklin	Rural	1442	Small
Jefferson	Rural	1709	Small
Union	Rural	2130	Small
Hamilton	Rural	2152	Small
Calhoun	Rural	2212	Small
Gulf	Rural	2218	Small
Dixie	Rural	2264	Small
Gilchrist	Rural	2669	Small
Washington	Rural	3373	Small
Madison	Rural	3439	Small
Holmes	Rural	3537	Small
Taylor	Rural	3629	Small
Bradford	Rural	4096	Small
Baker	Rural	4490	Small
Wakulla	Rural	4680	Small
De Soto	Rural	4714	Small
Hardee	Rural	4782	Small
Suwannee	Rural	5797	Small
Walton	Rural	5968	Small
Levy	Rural	6253	Small
Sumter	Suburban	6378	Small
Okeechobee	Rural	6916	Small
Flagler	Rural	7144	Small
Jackson	Rural	7311	Small
Gadsden	Rural	7431	Small
Hendry	Rural	7584	Small
Monroe	Suburban	9266	Small
Columbia	Rural	9560	Small
Nassau	Rural	10435	Small
Highlands	Rural	11303	Small
Putnam	Rural	12629	Small
Citrus	Suburban	15221	Small
Indian River	Suburban	15417	Small
Martin	Suburban	16790	Small
Charlotte	Suburban	17302	Small
Hernando	Suburban	17939	Small

School district	Urbanicity	Total enrollment	School size
St. Johns	Suburban	20918	Small
Santa Rosa	Rural	23228	Small
Bay	Rural	26033	Small
Clay	Suburban	29013	Small
Alachua	Suburban	29599	Small
St. Lucie	Suburban	30552	Medium
Lake	Suburban	30626	Medium
Okaloosa	Rural	30858	Medium
Leon	Rural	31802	Medium
Collier	Suburban	36475	Medium
Sarasota	Suburban	37048	Medium
Osceola	Suburban	37744	Medium
Manatee	Suburban	38250	Medium
Marion	Suburban	39319	Medium
Escambia	Rural	44648	Medium
Pasco	Suburban	52632	Medium
Lee	Suburban	60661	Large
Volusia	Suburban	62339	Large
Seminole	Suburban	62718	Large
Brevard	Suburban	71718	Large
Polk	Suburban	81163	Large
Pinellas	Suburban	114251	Very Large
Duval	Urban	126919	Very Large
Orange	Urban	156905	Very Large
Palm Beach	Suburban	159862	Very Large
Hillsborough	Urban	169682	Very Large
Broward	Urban	262027	Very Large
Dade	Urban	374806	Very Large

Table 18

Racial Composition of Full-Time Staff

School district	White staff	Percent of white staff	Black staff	Hispanic staff	Total staff
Alachua	2791	69.32	1124	90	4026
Baker	479	93.92	29	1	510
Bay	2903	88.05	333	34	3297
Bradford	434	82.98	87	2	523
Brevard	6793	86.54	760	238	7850
Broward	14247	57.38	8006	2171	24829
Calhoun	255	88.85	28	1	287
Charlotte	1993	92.14	107	43	2163
Citrus	1852	93.91	86	25	1972
Clay	3156	93.29	185	15	3383
Collier	3372	74.93	338	772	4500
Columbia	984	79.87	230	13	1232
Dade	9901	26.31	13382	13902	37636
De Soto	532	83.00	74	30	641
Dixie	289	93.83	16	0	308
Duval	7462	64.15	3801	196	11633
Escambia	4013	75.05	1224	31	5347
Flagler	879	85.01	107	38	1034
Franklin	164	85.86	22	3	191
Gadsden	257	24.71	758	20	1040
Gilchrist	330	94.29	19	1	350
Glades	93	75.61	26	4	123
Gulf	275	86.75	42	0	317
Hamilton	223	66.57	109	3	335
Hardee	566	84.60	40	62	669
Hendry	657	73.57	121	112	893
Hernando	2039	86.54	173	130	2356
Highlands	1139	81.82	181	67	1392
Hillsborough	12405	66.60	3119	2925	18626
Holmes	435	99.54	1	0	437
Indian River	1432	81.00	273	54	1768
Jackson	850	80.57	196	6	1055
Jefferson	115	40.93	166	0	281
Lafayette	141	96.58	3	2	146
Lake	2916	82.86	452	128	3519
Lee	5138	80.37	746	459	6393
Leon	2509	61.21	1504	56	4099
Levy	712	85.68	98	20	831

School district	White staff	Percent of white staff	Black staff	Hispanic staff	Total staff
Liberty	148	91.36	14	0	162
Madison	247	56.91	185	2	434
Manatee	4037	84.51	557	165	4777
Marion	3875	73.71	1113	219	5257
Martin	1602	83.01	216	105	1930
Monroe	978	72.12	115	252	1356
Nassau	1071	88.15	127	9	1215
Okaloosa	2982	88.51	297	42	3369
Okeechobee	731	86.20	66	47	848
Orange	10947	62.32	3622	2716	17567
Osceola	2953	71.23	276	874	4146
Palm Beach	10931	63.14	4182	1983	17312
Pasco	6390	93.82	180	207	6811
Pinellas	11765	83.88	1874	268	14026
Polk	8457	79.49	1766	366	10639
Putnam	1416	79.42	320	38	1783
St. Johns	2118	85.27	319	31	2484
St. Lucie	2643	64.83	1284	128	4077
Santa Rosa	2183	95.12	83	9	2295
Sarasota	3892	89.51	354	73	4348
Seminole	4970	75.47	1093	455	6585
Sumter	658	81.13	136	13	811
Suwannee	535	81.68	116	2	655
Taylor	408	79.84	96	2	511
Union	318	89.33	33	5	356
Volusia	6636	81.06	1088	412	8187
Wakulla	488	84.28	84	4	579
Walton	731	90.02	66	5	812
Washington	509	89.30	55	5	570

Table 19

Degree Level of Teachers

School district	Bachelor's degrees	Percent with bachelor's	Master's degrees	Specialist degrees	Doctoral degrees	Total degrees
Alachua	772	40.33	969	121	52	1914
Baker	175	65.54	86	5	1	267
Bay	1114	64.32	558	44	16	1732
Bradford	189	66.32	87	5	4	285
Brevard	2488	60.13	1577	40	33	4138
Broward	7790	58.93	4987	285	157	13219
Calhoun	96	58.18	67	1	1	165
Charlotte	535	51.29	479	19	10	1043
Citrus	605	57.95	409	19	11	1044
Clay	1254	68.67	552	13	7	1826
Collier	1137	55.71	855	30	19	2041
Columbia	393	64.43	203	7	7	610
Dade	10941	51.00	8041	1985	485	21452
De Soto	247	78.91	60	2	4	313
Dixie	102	71.33	37	3	1	143
Duval	4630	66.01	2289	52	43	7014
Escambia	1616	56.07	1197	52	17	2882
Flagler	287	64.21	153	2	5	447
Franklin	71	65.14	36	1	1	109
Gadsden	323	64.73	169	5	2	499
Gilchrist	129	70.11	51	3	1	184
Glades	53	69.74	22	1	0	76
Gulf	102	63.75	57	0	1	160
Hamilton	111	76.03	26	6	3	146
Hardee	266	81.10	57	3	2	328
Hendry	290	75.52	89	4	1	384
Hernando	688	62.66	394	9	7	1098
Highlands	486	69.23	210	0	6	702
Hillsborough	6934	62.29	3947	142	108	11131
Holmes	144	60.00	95	0	1	240
Indian River	575	66.24	242	44	7	868
Jackson	284	52.01	243	18	1	546
Jefferson	85	65.89	42	2	0	129
Lafayette	51	71.83	20	0	0	71
Lake	1159	65.93	559	25	15	1758
Lee	2119	61.60	1233	54	34	3440
Leon	1126	52.47	923	65	32	2146

School district	Bachelor's degrees	Percent with bachelor's	Master's degrees	Specialist degrees	Doctoral degrees	Total degrees
Levy	253	64.54	127	10	2	392
Liberty	57	66.28	29	0	0	86
Madison	145	67.13	70	1	0	216
Manatee	1263	59.63	793	43	19	2118
Marion	1704	68.49	723	40	21	2488
Martin	651	62.54	358	20	12	1041
Monroe	375	61.48	230	1	4	610
Nassau	388	65.10	200	5	3	596
Okaloosa	1073	57.84	714	40	28	1855
Okeechobee	306	73.56	103	7	0	416
Orange	6430	63.94	3451	97	79	10057
Osceola	1266	65.29	634	26	13	1939
Palm Beach	5910	63.20	3221	117	103	9351
Pasco	2062	63.84	1112	33	23	3230
Pinellas	4781	61.70	2779	119	70	7749
Polk	3821	71.89	1411	79	4	5315
Putnam	543	67.88	245	9	3	800
St. Johns	751	59.18	511	0	7	1269
St. Lucie	1197	65.99	563	36	18	1814
Santa Rosa	925	64.55	483	19	6	1433
Sarasota	884	41.48	1196	10	41	2131
Seminole	1993	54.78	1475	110	60	3638
Sumter	252	70.99	97	6	0	355
Suwannee	236	68.21	105	5	0	346
Taylor	149	60.08	88	6	5	248
Union	82	60.74	48	3	2	135
Volusia	2557	60.58	1529	92	43	4221
Wakulla	156	56.32	111	9	1	277
Walton	246	69.89	100	5	1	352
Washington	147	59.76	94	4	1	246

Table 20

School District FTE

School district	FTE ($)
Alachua	5,843
Baker	5,429
Bay	5,597
Bradford	5,617
Brevard	5,281
Broward	5,667
Calhoun	5,657
Charlotte	5,680
Citrus	5,561
Clay	5,172
Collier	6,348
Columbia	5,727
Dade	6,246
De Soto	5,743
Dixie	6,068
Duval	5,554
Escambia	5,683
Flagler	6,146
Franklin	6,635
Gadsden	6,824
Gilchrist	5,815
Glades	6,707
Gulf	6,014
Hamilton	6,500
Hardee	6,006
Hendry	5,742
Hernando	5,446
Highlands	5,986
Hillsborough	6,161
Holmes	5,662
Indian River	5,825
Jackson	5,788
Jefferson	6,583
Lafayette	5,802
Lake	5,213
Lee	5,862
Leon	5,901
Levy	5,633
Liberty	6,147

School district	FTE ($)
Madison	6,069
Manatee	5,586
Marion	5,622
Martin	5,933
Monroe	6,858
Nassau	5,307
Okaloosa	5,486
Okeechobee	5,685
Orange	5,528
Osceola	5,185
Palm Beach	6,306
Pasco	5,747
Pinellas	5,698
Polk	5,618
Putnam	5,739
St. Johns	5,736
St. Lucie	5,928
Santa Rosa	5,453
Sarasota	6,589
Seminole	5,204
Sumter	5,750
Suwannee	5,430
Taylor	5,842
Union	5,436
Volusia	5,641
Wakulla	5,395
Walton	5,783
Washington	6,499

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