The Achievement Gap Between White and Non-White Students

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Chapter 1

The Achievement Gap between White and Non-White Students: A Conceptual Analysis[1]

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1.1 Sumario en espanol

En este artículo, nosotros analizamos por delante de y presentamos estudios de investigación en los que investigadores revisaron diferencias en el logro académico entre estudiantes que fueron Blancos y de color (es decir, específicamente hispano o los estudiantes designaron como inglés Limitado Capaz). Como anticipado, la mayoría de los investigadores cuyos estudios fueron analizados informó que estudiantes Blancos superaron todos los otros grupos de estudiantes minoritarios en todos los medidas estandarizadas de logro, a excepción de estudiantes norteamericanos asiáticos que superaron a estudiantes Blancos en todo el académico las pruebas estandarizadas y en todos los niveles de grado. El hecho concomitante con los estudios de vacío de logro, una armazón teórica por que el vacío de logro puede ser comprendido fue presente. Por último, las implicaciones para el personal de la escuela, el gasto monetario, y las aulas fueron proporcionados.

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1.2 Introduction

Discussed in this conceptual analysis were the results of numerous studies in which the achievement gap and related variables were analyzed. Educational equity in elementary schools, in particular, where the educational process begins for all students was discussed. Also demonstrated was the continued presence of an achievement gap among Whites, non-Whites, and students with a label of Limited English Proficient, regardless of the accountability mandated by the NCLB Act. Researchers who analyzed data from pre-kindergarten through high school have repeatedly documented the academic achievement discrepancies between and among White, non-White, and students with a label of Limited English Proficient. Regardless of additional money, resources, and qualified personnel, minority studies are performing much more poorly than their White counterparts. We hope that, through this article, we have provided an overview of the empirical research in a way that will assist policy makers, administrators, and educators in making cognizant resolutions regarding the minimization of the achievement gap. Specific subheadings in this conceptual analysis were: Equity; Hispanics and Students with a Label of Limited English Proficient; Achievement Gap; Achievement Gap and Teachers; Achievement Gap, Early Childhood Education, and Literacy; Achievement Gap and Monetary Spending; and Achievement Gap Among Whites, Non-Whites, or Students with LEP.

It has been over 50 years since the ruling of *Brown vs. Board of Education of Topeka* established segregation on the basis of race as unconstitutional (Benjamin & Crouse, 2002; Carroll, Fulton, Abercrombie, & Yoon, 2004). The law of 1954 established the union of Whites, Blacks, and other minorities (i.e., Hispanics and Asian-Americans) within all public schools across the nation (Benjamin & Crouse, 2002; Carroll et al., 2004; Nieto, 2004). The premise of the law was to establish equal education and opportunity for all students, regardless of ethnicity (Benjamin & Crouse, 2002; Carroll et al., 2004). Yet, the response to the restructuring of public schools and the integration of minorities within classrooms has created "White flight" or decreased enrolled of Whites in public schools (Reber, 2005, p. 560). The movement of White students to the private school sector has increased the achievement gap within the public and private schools (Kahlenberg, 2001; Reber, 2005). Yet, since the implementation of *Brown vs. Board of Education*, researchers have documented that integrative efforts have been slow and, at times, nonresponsive to the resegregation efforts across the nation (Lutz, 2005; Orfield & Lee, 2007; Reber, 2005).

Brown vs. Board of Education was a catalyst in the social and civil rights changes that occurred during this time period (Benjamin & Crouse, 2002; Carroll et al., 2004). Soon after, the Civil Rights Act of 1964 was enacted to "protect people from discrimination based on race, color ...in programs that receive federal funding" (Office of Civil Rights, n.d., ¶. 2). In 1964, section 402, of the Civil Rights Act stated that:

1.2.1

The Commissioner shall conduct a survey and make a report to the President and the Congress, within two years of the enactment of this title, concerning the lack of availability of equal educational opportunities for individuals by reason of race, color, religion, or national origin in public educational institutions at all levels in the United States, its territories and possessions, and the District of Columbia. (Office of Civil Rights, n.d., para. 4)

Coleman and colleagues were commissioned to study and to determine equality within the public schools for all students (Kahlenberg, 2001; Towers, 1992). In 1964, 4,000 schools nationwide and 600,000 students were involved in the second largest study in history (Kahlenberg, 2001). After two years, Coleman stated in his report, *Equality of Educational Opportunity*, that students' family background was the overall predictor to students' success in any educational institution. Researchers concluded that students' academic achievement was not based on the expenditure of government funding within public educational institutions, but rather social class influenced the achievement of students within the same school. Coleman and his associates determined that students' influence on one another was substantial. The integration of students, minority and White, could have a positive impact on the academic achievement of Black students (Kahlenberg, 2001; Towers, 1992; Wong & Nicotera, 2004). Investigators also stated that children from low-income homes would benefit from the integration with White middle class students. Coleman cautioned that the ratio of Black students to White students should be limited to 50% (Kahlenberg, 2001; St. John, 1974).

The publication of the Coleman report during the 1960s justified the findings by some policy makers as a means to cut school expenditures and school reform within low performing schools (Ellinger, Wright, & Hirlinger, 1995). School finance researchers argued that Coleman's report justified the inequalities in spending and "existing finance inequalities were harmless" because schooling made little difference between the achievement gap between Whites and minority students (Guthrie, 1983, p. 210). Barron (1971) noted that this practice was relevant in schools across Chicago during the 1960s. Barron stated that many factors influenced the differences in expenditures, yet race and status were leading factors. Many of the low performing schools in Chicago were attended by low socio-economic minorities who received less funding compared to their White counterparts. Findings from the Coleman report allowed many education agencies to substantiate the differences in spending and justify the continued inequalities in monetary distribution among districts and schools.

Adversaries of the Coleman report opposed and ridiculed the findings that denied that students' success was not based on the amount of money that was allocated to schools and districts (Carver, 1975; Garmoran & Long, 2006; St. John, 1974; Wenglinsky, 1997). Goldberger and Cain (1982) argued that the method, assessment, and evaluation of the Coleman report were flawed and fell "below the minimum standards for social-scientific research" (p. 103). Cain and Watts (1970) concluded that the "...analytical part of the Coleman report has such serious shortcomings that it offers little guidance for policy decisions" (p. 228). Carver (1975) stated that the interpretation of the report was flawed and the test results were inaccurate because the test analysis did not measure the achievement of students, but rather student aptitude. In a reply to the criticisms of Cain and Watts, Coleman (1970) restated that inferences can be made that students' academic accomplishments were related to their "social environment" and spending great amounts of money to balance academic achievement was "unimportant" (Coleman, 1970, p. 245).

A year before the release of the Coleman report, the Elementary and Secondary Education Act (ESEA) of 1965 was signed into law that gave money to poorly funded schools throughout the nation (Lyndon Baines Johnson Library and Museum, 2009). The ESEA was signed by President Lyndon B. Johnson on April 11, 1965, providing disadvantaged children from underprivileged backgrounds with educational programs to succeed (Lyndon Baines Johnson Library and Museum, 2009). Over one billion dollars were allocated under the Title I of the ESEA for school district programs that would aid in the educational development of deprived school children (Andrews, 2006). The money was used to purchase textbooks for school libraries, buy educational materials, supplemental services for public schools, improve educational research, and support state and local agencies. In 1968, the *Bilingual Education Act* was added to the ESEA by Congress to address the needs of students who were limited in English proficiency. Toward the end of the 1980s, the ESEA obligated school districts to implement standardized tests to assess the needs and achievements of students (Andrews, 2006). In 1994, the ESEA was reassigned as the *Improving America's Schools Act*, which evaluated the academic progression of students and identified schools that were not meeting the annual yearly progress. Soon after, the *Improving Americas Schools Act* was renamed the No Child Left Behind Act (Andrews, 2006).

1.3 No Child Left Behind (NCLB) Act

In 2001, President George W. Bush signed the No Child Left Behind (NCLB) law which was designed to diminish achievement gaps between White students and students who were minorities, as well as hold higher accountability for schools across the nation (No Child Left Behind: A Desktop Reference, 2002). The NCLB act was comprised of four fundamental principles: accountability, flexible and local control, enhanced parental choice, and teaching methods that work. Emphasized by these four principles were that NCLB was a law that increased academic success for all children, including minority and low socio-economic students.

Accountability under NCLB is emphasized as a means to greater compliance of states, districts, and school administrators to develop and implement rigorous standardized tests to all students in grades 3 through 8, in both reading and math (Yell & Drasgow, 2005). An annual yearly progress (AYP) report is created every year for each school to determine the extent to which all students have made sufficient academic progress. By 2013-2014 school year, academic progression must be at 100 percent (No Child Left Behind: A Desktop

Reference, 2002). Accountability also entails using the National Assessment of Educational Progress (NAEP). The NAEP is also referred to as the "nation's report card" and is an "extensive data collection system that includes achievement tests" (Yell & Drasgow, 2005, p. 27). This form of assessment is given to a random sample of students every other year. Zhang and Cowen (2009) reported that schools within the 2003-2004 school year that were failing to meet the AYP had greater amounts of minority students enrolled and higher poverty levels. Also revealed in the study was the presence of a substantial teacher turnover, which affected the academic performance of students (Zhang & Cowen, 2009). Abedi and Hejri (2004) stated that unrealistic accountability had been placed on schools and districts with high number of students who were LEP. Schools with high number of students who were LEP have a lower academic baseline, yet were still required to establish 100% academic achievement and English proficiency by the 2013-2014 academic school year. Sunderman and Kim (2004b) reported that schools with a large minority population were expected to make unrealistic yearly progress to avoid sanctions, which include furnishing parents the option to move to a different school and purchasing supplemental service from school funds. Researchers have demonstrated that a "one-size-fits-all accountability model does not work in all conditions" and limits state management and weakens the educational changes by teachers that are needed in classrooms (Sunderman & Kim, 2004b, p. 5).

Flexible and local control under NCLB entails states' and schools' flexibility to spend federal education money. The purpose behind the flexibility is to allow greater decision making at the state and local levels where the needs of students are better known. Enhanced parental options under NCLB are to provide safeguards for students who are enrolled at schools that are low performing and not showing annual yearly progress. Parents are given the option to transfer their children to another school within the school district and the school district is required to provide transportation for the student (Yell & Drasgow, 2005).

Scientific research is emphasized in determining which teaching methods and programs work effectively. Reading and math programs that have been research based and that improve student achievement are fully supported through federal funds under the NCLB Act (No Child Left Behind: A Desktop Reference, 2002). Teale, Paciga, and Hoffman (2007) stated that teaching programs in early literacy development have been given "insufficient attention to curriculum elements for success in reading" to address all students' developmental reading and writing needs (p. 345). The curriculum elements excluded are comprehension instructions, development of core concepts, and writing instructions. Regardless of research base methods for academic success, educational programs that are provided under the NCLB law have not improved the academic needs of students (Teale et al., 2007).

1.4 Equity

Equity is also a major influence in the behaviors, expectations and accomplishments of minorities in society (Clark, 2001; Henderson & Kennedy, 2003). As Ogbu (2008) and Adams (1965) theorized, individuals are influenced by their surroundings and the belief that their work is equivalent to other individuals' work. When individuals in a society begin to speculate that an imbalance exists in the output (the amount of work) and input (over rewards or under rewards for accomplishment), then feelings of afflictions become present. Human beings (by nature) generally desire a balance in equity, regardless if the balance is to their benefit (Ogbu, 2008). If the balance is not restored, then individuals will generally begin to alter their output. Huseman et al. (1987) built on Adams' equity theory to create the Equity Sensitivity Construct. In the author's theory, equity is further divided to include sections where "a number of demographic and psychological variables affect how individuals allocate to themselves and/or others, as well as how they react to inequitable treatment" (Huseman et al., 1987, p. 223).

Cultural-ecological (CE) theory is based on the premise that minorities' academic achievement is linked to their ethnicity and to their willingness to conform to their environment (Foster, 2004; Ogbu, 1981). In this theory, minority students have the capability to participate successfully with White students within the classroom and on standardized tests (Lynn, 2006). The CE theory (Ogbu, 2008) demonstrated the complexities of community and family dynamics that influence the success and failures of students who are from minority backgrounds. Minority students have the capabilities to succeed in school and on standardized

tests, yet, family, culture, and community must work to create an environment that encourages minority students to succeed in academic performance.

The notion of equity in education has been based within similar contexts. The No Child Left Behind Act was created to influence equity within schools and districts, including minorities and students who were LEP (No Child Left Behind: A Desktop Reference, 2002). Henderson and Kennedy (2003) defined educational equity as "...the organizational approach of schools to students in a multi-cultural or multiethnic setting" (p. 38). Students' perception of the amount of labor that is exerted should be similar in reward (e.g., grade, advancement, internal and external rewards). However, socio-economic status (SES), ethnicity, and gender can hinder education equality in schools and classrooms (Clark, 2001).

Researchers (e.g., Clark, 2001; Gandara & Contreras, 2009) have established students who are minorities and who come from low SES backgrounds are confronted with inequity within schools because they are confronted by many obstacles. Gregory, Skiba and Noguera (2010) synthesized empirical data that disclosed Hispanic, Black, and American-Indian students were disproportionately disciplined with suspensions and expulsions in comparison to White students. The researchers argue that "the racial discipline gap influences racial patterns in achievement" (p. 59). Hispanic students and other minority students were faced with an excessive amount of school discipline, which lead to loss of academic learning, and inevitably an increase in the academic achievement gap.

According to Roscigno, Tomaskovic-Devey, and Crowley (2006), educational inequalities are also seen within rural and inner-city areas around the United States. They used data from the Common Core of Data and the National Educational Longitudinal Survey and compared educational equity among inner city/rural and suburban places. A comparison of the means of school and family resources indicated that students living in inner city/rural neighborhoods "lag behind" individuals attending schools in suburban areas (p. 2122). Roscigno et al. (2006) noted that families in city/rural areas earn less income and have parents who have less education compared to suburban families.

De Valenzuela, Copeland, Qi, and Park (2006) examined educational equity in special education and the disproportionate amount of students that are from minority backgrounds. They reviewed data about 17,870 students in the Special Education Information System database and concluded that African American students were more likely to be identified with a disability than were White students. Students who were English language learners were more likely to be categorized disproportionately in special education than their White counterparts. Finally, Hispanic, English language learners, Native American, and Black students were more likely to be placed in segregated settings than were Asian American students or White students.

1.5 Hispanics and Students with a Label of Limited English Proficient

To understand the plight that faces Hispanic students in regard to academic achievement, an examination of past occurrences within the Latino community must be evaluated. Segregation and discrimination of Hispanics has been an issue since the cession of Texas, New Mexico, Arizona, Nevada, Utah and parts of California during the Treaty of Guadalupe Hidalgo in 1848 (Rochmes, 2007; Ruiz, 2006; The Library of Congress, 2009). Over 95,000 Latinos were absorbed as part of the agreement between Mexico and the United States. Under the Article VIII, within the Treaty of Guadalupe Hidalgo, the United States stipulated:

1.5.1

Mexicans now established in territories previously belonging to Mexico, and which remain for the future within the limits of the United States, as defined by the present treaty, shall be free to continue where they now reside, or move at any time to the Mexican Republic, retaining the property which they possess in the said territories, or disposing thereof, and removing the proceeds wherever they please, without their being subjected, on this account, to any contribution, tax, or charge whatever. (The Library of Congress, 2009, para. 2)

Some historians have conceded that the agreement that was made between the United States and the Mexican citizens was fulfilled to few Mexicans (Griswold De Castillo, 1990; Menchaca, 1993; O'Rourke,

1998). Many Mexicans' land was stripped from them under the pretense that grants signed through the Spanish and Mexican government were not recognized and invalid (Lopez, 1997; Menchaca, 1993; Ruiz, 2006; Zentella, 2004). Many Mexicans were looked upon as foreigners and were treated as second class citizens (O'Rouke, 1998). Mexicans who were of Spanish descent and of light phenotype became assimilated, yet discrimination toward Mexicans who were darker skinned and of indigenous descent became prevalent throughout the southwest (Menchaca, 1993). Mexicans were seen as inferior and subordinates by their Anglo counterparts (Menchaca, 1993; Ruiz, 2006; Zentella, 2004). Mexican children were also discriminated against for their lack of English proficiency and were often segregated in school because of the color of their skin (Menchaca, 1993). This sentiment and extreme hatred became a norm for many Mexicans who chose to continue to live in the territory that had been occupied by their families for generations and become citizens of a foreign and hostile country.

The animosity that was faced by Mexicans in the southwest during the 1800s is still existent today (Menchaca, 1993; Ruiz, 2006; Zentella, 2004). The sentiment of inferiority is now felt by Hispanics from different Spanish speaking countries who now reside throughout the United States (Ramirez & De La Cruz, 2003). In the 2002 U.S. Census report, it was estimated that over 37 million Hispanics were living in the United States (Ramirez & De La Cruz, 2003). Of the 37.4 million, 66.9% were of Mexican origin, 14.3% were of Central and South American origin, 8.6% were of Puerto Rican origin, 3.7% were of Cuban origin, and 6.5% were designated other (Ramirez & De La Cruz, 2003). According to the Census Bureau, Hispanic families are likely to be larger than their White counterparts and 43% Latinos, ages 25 and older, do not have a high school diploma. Hispanics are more likely to be unemployed compared to Whites and over 21% of Latinos live in poverty across the United States (Ramirez & De La Cruz, 2003).

Hispanics illegally enter the United States for economic opportunities that are limited in their own countries. Many Hispanics leave behind families, friends, and familiar surroundings to live in a country that has held and continue to hold great animosity for undocumented residents (Berg, 2009; Flores & Chapa, 2009). Yet, some undocumented Latinos eventually bring their families to the United States. Many Latinos have chosen and continue to chose to have their offspring in the United States. Passel and Cohen (2009) estimated that 73% of undocumented parents have children who are born as American citizens. In K-12 schools, it is estimated that 6.8% of the students nationally have at least one parent who is undocumented. The Pew Hispanic Center estimated that there were nearly 12 million illegal immigrants in the United States in 2006 (Passel & Cohen, 2009). Over 75% were estimated to be of Hispanic origin and nearly 60% were of Mexican origin. Among undocumented immigrants, the Pew Hispanic Center estimated that 47% do not have a high school diploma from their native country (Passel & Cohen, 2009).

The majority of the resentment held toward undocumented family units stems from the idea that undocumented families are a burden to society (Ramirez & De La Cruz, 2003). Illegal immigrants are believed to drain the American health care system, school system, and are unwilling to assimilate to American standards (Ramirez & De La Cruz, 2003). The Pew Hispanic Center estimated the median household income of an illegal immigrant in 2007 was $36,000 (Passel & Cohen, 2009). Nearly 60% of the undocumented immigrants and their children did not have health insurance in 2007 (Passel & Cohen, 2009).

According to the Pew Hispanic Center (2006), the notion that undocumented families do not want to learn the English language creates antipathy among American citizens, including other Hispanics. The Pew Hispanic Center (2006) estimated that 57% of Hispanics believe that immigrants should learn how to speak English to fit into American society. A majority of Hispanics in the same survey (92%) believed that children of illegal parents should be taught to speak English. A greater percentage of Hispanics than Whites or Blacks who were surveyed believed that all children of immigrant families should be taught how to speak English.

Cosentino de Cohen, Deterding, and Clewell (2005) reported that 10% of the elementary schools across the nation had 70% of the students who were LEP. Within this 10% of schools, some of the schools were described as being "High LEP" because they had very high percentages of students who were LEP (n of students with LEP = 1,406,186) and some of the schools were described as being "Low LEP" because they had low percentages of students who were LEP (n of students = 643,492) (p. 1). Consentino de Cohen et al. (2005) reported that schools with a high percentage of LEP students have been documented to have more teachers who were new, emergency certified, or uncertified teachers (47%), compared to schools with a low

percentage of students who were LEP (20%). Low LEP schools, on the other hand, lagged behind in teacher trainings and services that focused on students who were LEP.

1.6 Achievement Gap

The success of all students in education has been a longstanding conviction for parents, educators, and policymakers within the United States. Various programs (e.g., Reading First, William F. Goodling Evan Start Family Literacy Program, Education of Migratory Children, and School Dropout Prevention Initiative) have been created in the attempt to increase achievement and decrease the achievement gap that has inflicted the students who are disadvantaged (No Child Left Behind, 2002). The achievement gap may be defined as "the difference between how well low-income and minority children perform on standardized tests as compared with their peers. For many years, low-income and minority children have been falling behind their White peers in terms of academic achievement" (http://www.ed.gov/nclb/index/az/glossary.html).

Researchers (e.g., Haycock, 2001; Lee & Bowen, 2006; Viadero & Johnston, 2000) have identified several other factors that serve as indicators for students' lack of academic success, compared to students who are White. These indicators include: poverty, test bias, academic loss over the summer, racial stereotyping, access to childcare, parental involvement, qualified teachers, and high student mobility (Haycock, 2001; Lee & Bowen, 2006; Viadero & Johnston, 2000). Finding solutions to these factors can create greater opportunities for all students regardless of ethnicity, socio-economic levels, and language proficiencies (cite).

In every society, poverty affects the lives of families (Freire, 1970). Poverty brings adversity and missed opportunities for families and, most importantly, children. Freire (1970) discussed the afflictions experienced by the peasants of Brazil and the struggles that they faced as a result of their poverty. He conducted a national campaign to help educate the poor, illiterate adults and children of Brazil because he believed that education brings power to those persons who do not have any power.

Allington (2002) identified poverty as a growing problem that was overlooked by the school systems, politicians, and by policy makers. He believed an achievement gap was growing between the poor and the rich and that little had occurred to alleviate this dilemma. Thus, poor children continue to lack proficiency in reading because of the "absence of reading materials, such as books and magazines" (p. 14). Allington (2002) also stated that the "achievement gap continues to grow due to children having little or no exposure to reading materials during the summer" (p. 13).

Viadero and Johnston (2000) suggested that poverty is the primary contributor to the gaps and lags in minority success. Researchers (e.g., Levin, 1995; Sirin, 2005; Viadero & Johnson, 2000) have estimated that Hispanics are twice as likely to be raised in a poor household, compared to Asian-Americans and White families. Growing up in households with medium to high socio-economic status has been related to academic achievement. Chow (2007) compared the Texas Assessment of Knowledge & Skills (TAKS) scores of nearly 10,000 students, from five different school districts and determined that students who were receiving free and reduced lunches scored 50-100 points lower than students who did not receive free and reduced lunches. Other researchers have suggested that reducing differences in socio-economic status and income "...by several thousand dollars would reduce the achievement gaps" among families of minority status (Duncan & Magnuson, 2005, p. 47).

Duncan and Magnuson (2005) maintained that socio-economic hardships for families have inadvertent consequences on children and on their test scores. A family's home stability and economic circumstances play an important role in academic success (Lee & Bowen, 2006; Tapia, 2004). Tapia (2004) documented that families who were involved in their child's schooling and classroom activities had higher grade point averages than their classmates. However, parents who did not involve themselves in their children's school dealt with an "information gap" from schools (Teske, Fitzpatrick, & Kaplan, 2006, p. 969). Thus, parents who were low income (less than $10,000 per year) received less information from school personnel and administrators of school districts than parents who had high incomes (more than $10,000 per year) (Teske et al., 2006).

Eamon (2005) also documented that parents who provided cognitive stimulation within the home, increased students' academic achievement overall in reading and mathematics. Alfaro, Umaña-Taylor, and Bámaca (2006) described similar findings on students' academic achievement and their parents' involve-

ment in their schooling. The researchers discussed academic achievement for girls, if their mothers were involved, and academic success for boys was prevalent if their fathers were involved. Similarly, Portes (1999) determined that 40% of the variance in school achievement among Latino children was explained by socio-psychological factors, which included family support. When analyzing the factors that create academic achievement among students who score low on standardized tests, Ma and Klinger (2000) commented that a statistically significant relationship was present between families' attitudes and their belief in working with their children's teachers and school. Strong parental involvement was associated with higher socio-economic status and higher achievement scores.

Parenting roles and social capital were important variables when determining academic success of Whites and non-Whites. Pong, Hao, and Gardner (2005) determined that Hispanic students who were economically disadvantaged, had parents who were less educated or had lower grade point averages than students who were from high socio-economic status. Davis-Kean and Sexton (2009) documented statistically significant differences among parent's educational attainment, ethnicity, and their children's academic achievement. They concluded that student success was related to their home environment, which is strongly connected to parental educational accomplishments.

Factors that also contribute to students' success and educational opportunities are the national increases of single family households (Loyd, Tienda, & Zajacova, 2001). Poverty and changes in socioeconomic status generally affect minorities (e.g., Blacks, Latinos, and Native Americans) who are more than likely to be single-parent mothers (Kaiser & Delaney, 1996; Levin, 1995; Seccomb, 2000). These single parents have very little savings or pension and live paycheck to paycheck (Miller et al., 1967). They generally live in subsidized housing and spend a large percentage of their income on paying their rent (Kaiser & Delaney, 1996; Miller et al., 1967). Furthermore, these neighborhoods are generally crime ridden and are unsafe for children (Kaiser & Delaney, 1996). As a result, little or no income is available for insurance to cover unexpected plights that may occur (Miller et al., 1967). Consequently, mothers do not have the resources to accomplish their education, which would increase their income and the possibility for better living conditions (Kaiser & Delaney, 1996; Miller et al., 1967). With poverty comes limited access to transportation, which in effect makes it difficult for families to arrive at doctor's appointments, school-parent conferences, and sometimes school (Miller et al., 1967). Finally, poverty can increase the chances for poor nutrition, illnesses, and depression to both parents and children, which can inadvertently create roadblocks in the children's academic success (Kaiser & Delaney, 1996; Seccomb, 2000).

1.7 Achievement Gap and Teachers

Researchers have documented that highly qualified teachers contribute to closing the achievement gap between Whites and members of minority groups (Boyd, Loeb, Wyckoff, Lankford, & Rockoff, 2008; Flores, 2007; Haycock, 1998). Boyd et al. (2008) argued that teachers who are highly qualified make an impact on the achievement gap for minority students and students who come from poverty stricken environments. Well-prepared educators are essential to the success of all students; otherwise the NCLB Act would not have mandated that states employ highly qualified teachers in every classroom by the beginning of the 2005-2006 academic school year (No Child Left Behind, 2002). According to the NCLB Act, highly qualified teachers are individuals who have a bachelor's degree, fully certified by the state in which they preside, and show competency in the subject that is being taught (No Child Left Behind, 2002). Akiba, LeTendre, and Scribner (2007) commented that among 46 countries around the world, the United States had some of the highest qualified teachers in relation to certifications and standards. Yet, they also concluded that the students who came from higher socio-economic status had greater access to these qualified teachers, compared to lower SES students (Akiba et al., 2007; Borman & Kimball, 2005).

Distribution of highly qualified teachers can create opportunities for all students, regardless of their economic background or ethnic status (Haycock, 2003). School districts must also be willing to increase teachers' salaries to reduce teacher attrition and attract qualified teachers that are needed to close the achievement gap. Weiher (2000) reported that school districts that increased teacher pay and hired teachers who were minorities experienced an increase in minority student achievement on standardized test scores.

Similarly, Gandara and Contreras (2009) wrote that Latinos specifically were not receiving the "highly qualified" teachers who were necessary to achieve academic success (p. 103). Highly qualified teachers affect students' success through the expectations they hold for them. High expectations and support are needed from preschool through college for many Latino students who are unsure and face many obstacles. To the contrary, Wenglinsky (2004) noted that teachers who receive a master's degree "raised the gap by three points, suggesting that better educated teachers may be less responsive to the needs of low achieving students" (p. 7). Additionally, the more testing experienced by students, the poorer the performance on standardized achievement tests.

Simpson, LaCava, and Graner (2004) stated that hiring highly qualified educators is not an issue for most schools. The argument does not lie in whether teachers are qualified to educate and instruct children. The issue lies in the "...the resources and assessment procedures associated...are clearly controversial" (p. 69). Success of students within a classroom depends on a variety of factors, including the resources and materials that are available. Highly qualified teachers are one indicator in increasing success and closing the achievement gap.

Bol and Berry (2005) conducted a survey of 379 teachers to determine their perceptions of contributors to achievement gaps among students. The majority of the teachers from schools with a large percentage of White students indicated that family support and students' strong character (e.g., motivation, intellectual ability) contributed to academic achievement. Researchers also noted that teachers who instructed in schools with higher percentage of Hispanic students perceived language as a contributor to the academic achievement gap.

1.8 Achievement Gap, Early Childhood Education, and Literacy

The success of students in early childhood classes (e.g., pre-kindergarten through first grade) is essential to future academic achievement (Early Reading First, n.d.). Preventative measures (such as early literacy programs) must be taken to ensure the success of low achieving students and students from minority backgrounds (Haskins & Rouse, 2005; Neuman & Dwyer, 2009). To ensure the academic achievement of all children, researchers have concluded that effective pre-natal care must be implemented (Goosby & Cheadle, 2009). Goosby and Cheadle (2009) reported that a child's low birth weight directly influences future academic achievement in math and reading. Low birth weight has been associated with cognitive and physical delays in children.

Research in early literacy programs that are subsidized by the Early Reading First legislation have been evaluated by some researchers to determine if low income and minority children were being engaged in effective strategies in vocabulary development for future success. Neuman and Dwyer (2009) evaluated 12 curriculum programs that served over 41,000 children across the nation during the three years of a grant: 2005, 2006, and 2007. The researchers concluded that the research-based curriculum had "little consensus on the breadth or depth of vocabulary teaching in these early years" (Neuman & Dwyer, 2009, p. 387). The lack of curriculum instruction creates uncertainty for teachers who are not cognizant in vocabulary instruction and creates a greater academic gap for children who are academically deficient.

Haskins and Rouse (2005) stated that students who are Black or Hispanic begin kindergarten "far behind" other kindergartners in both reading and math readiness (p. 1). The authors maintained that many of these kindergartners were from low-income families who had little access to educational resources that encouraged reading development. Rumberger and Anguiano (2004) conducted a research study in California on students in kindergarten and concluded that Latino students were at a disadvantage and that "...the disadvantage increases during the first two years of school" (p. 1). The researchers concluded that students' initial achievement could be linked to their socio-economic status and language background (Rumberger & Anguiano, 2004). Gregory and Rimm-Kaufman (2008) reported that positive family interactions influence young children's future achievements. A longitudinal study was conducted and determined that positive interactions were related to high school graduation, regardless of ethnicity, socio-economic status or gender.

Lleras and Rangel (2009) commented on the negative effects of grouping young minority students in low reading groups. Hispanic and African American students who were placed in low reading instructional

groups during their formative years learned less and had diminished academic achievement in future grade levels than their White counterparts. Foorman and Torgesen (2002) contended that small group instruction of minorities was effective if teachers used strategies that were intensive and comprehensive to the needs of each student. The authors argued that reading instruction could be effective as long as teachers used research based strategies on minority students and students from low socio-economic backgrounds.

The topic of school success among minorities and academic achievement within math has been investigated by many researchers since the implementation of the NCLB Act (Balfanz & Byrnes, 2006; Lee, 2004; Lopez, Gallimore, Garnier, & Reese, 2007; Stevens, Olivarez, & Hamman, 2006). Researchers attempted to determine the variables that create achievement gaps among Hispanic minorities and White students. Azmitia, Cooper, and Brown (2009) focused on the math achievement of Hispanic students and the variables that support success in early adolescents. They determined that parents' emotional support and academic guidance was positively and statistically significantly related to student success in school and 20% of the variance associated with family income and academic achievement was statistically significant. . Investigating math and reading achievement among students in third grade, Grimm (2008) determined that students who demonstrated early reading skills had greater achievement scores when analyzing math concepts and estimations on academic achievement tests than students who were not exposed to literacy at an early age.

1.9 Achievement Gap and Monetary Spending

Coleman (1966) reported that spending great amounts of money to balance academic achievement was "unimportant" (Coleman, 1970, p. 245). Investigations of the impact of government, state, and local spending, and academic achievement decreased as a result of Coleman's findings (Wenglinsky, 1997). Researchers focused their investigation on other factors such as family, ethnicity, and gender. Yet, researchers have stated that examinations of monetary spending within districts and schools determined that money does matter when considering academic achievement (Condron & Roscigno, 2003; Elliot, 1998; Wenglinsky, 1997). Wenglinsky (1997) communicated that academic achievement was not directly associated with spending on students. Yet, increases in spending on instructional materials and administrative spending raised teacher-student ratios, which influenced academic achievement among students. Crampton (2009) commented that student achievement was statistically significant in relation to school infrastructure and human capital. Human and social capital accounted for over 55% and 77% of the variance in academic achievement among fourth and eighth grade students in math and reading. McFadden (2009) reported increased academic achievement among minority students within Miami's 39 lowest performing schools. An increase in monetary spending, extended reading and math periods, smaller group instruction, teacher compensation, and additional professional development created an increase in student success. Lee and Wong (2004) revealed that districts and schools with a large proportion of minority students tended to spend less on education, compared to school districts with a White majority.

Yet, some researchers contend that school funding has a statistically insignificant effect on the success of students, as measured by standardized testing, and does not close the achievement gap among minorities (Ceci, Papierno, & Mueller-Johnson, 2002; Johnston, 1997). Hill (2008) disputed that school districts and administrators did not know how to use the money allocated to meet the needs of students who were immigrants and who were from low income families. Thus, Hill argued that money was not the reason for low academic achievement among students, rather a lack of evaluations and strict accountability toward the programs being implemented were responsible. Evers and Clopton (2006) also contended that school districts were not accountable for their spending and frivolously spent money on curriculum programs that were ineffective at meeting the needs of low-achieving students. The researchers compared five school districts in five different states (i.e., New Jersey, California, Massachusetts, Washington, D.C., and Missouri) whose student expenditure far exceeded the national average and were low performing in their national standardized exams. Regardless of the large amounts of spending per student (between $8,000-20,000), these five school districts were unable to increase academic success among low performing minority students.

Rothstein and Miles (1995), though recognizing that overall school spending had increased, contended that school expenditures in regular classroom instruction had actually decreased, from 80% of monies to

59% of monies. The decrease in regular classroom expenditures was due to increased spending in special education that had risen by 38%. Rothstein and Miles (1995) suggested that policy makers should examine all areas of school spending (e.g., student health nutrition, bilingual education, and training for disabled) to determine whether taxpayer's money was being utilized effectively.

1.10 Achievement Gap Among Whites, Non-Whites, or Students with LEP

Researchers have established that minority students exhibit setbacks in literacy during the summer months (Allington & McGill-Franzen, 2003). These setbacks can have consequential effects for minority students on their passing rates in math achievement. Entswisle and Alexander (1992) examined the difficulties that minority students face during the summer months when race, poverty, and school composition were used as variables in academic achievement. Entswisle and Alexander analyzed the characteristics and test scores of 790 first grade students by ethnicity, whether they attended segregated or integrated schools, and their family's socio-economic status in relation to their math test scores on the California Achievement test (CAT). The researchers concluded that upon beginning first grade, White students had a 6-point advantage over Black students. By the third grade, White students outperformed Black students by 14 points in math. They also indicated that White students who were segregated achieved the most points (93.4), compared to segregated Black students (79.3) who gained the least amount of points on the CAT. Black students in both integrated and segregated schools gained the same amount of points, but they also lost the most points during the summer months. Findings over a 24-month period indicated that socio-economic status (i.e., meal subsidy status) had a negative effect for all students. Black students who attended segregated schools were at a disadvantage, compared to White students in segregated schools.

Ivory (1993) analyzed the exit-level Texas Assessment of Academic Skills math passing rate of 18,290 eleventh grade Hispanic, Black, and White students in Texas. Ivory concluded that Black students' passing rate was 39% less than Hispanic students' passing rate, and Hispanic students' passing rate was 31% less than the passing rate of White students. In regard to Texas Assessment of Academic Skills passing rates and grade point average, all ethnic groups had higher passing rates on the Texas Assessment of Academic Skills test if their grade point averages were above average in their course work.

Bankston and Caldas (2001) examined the scores of White students who were enrolled in public and private schools and the association to academic achievement among minority students. Data analyzed were from the 1990 U. S. Census of population and Housing, the 1990 Annual Statistical and Financial Report from the Louisiana Department of Education, and the 1990 Louisiana Graduation Exit Examination. Research findings were that a greater number of minority students were present in public schools if a large percentage of White students were enrolled in nonpublic schools. Moreover, test scores were lower for minority students, when a large percentage of White students were enrolled in nonpublic schools. Furthermore, Bankston and Caldas (2001) reported the achievement gap was greater between White students and minority students in school districts when larger number of White students were enrolled in nonpublic schools. As such, these findings are reflective of White flight from public schools and its resulting negative effects on the achievement gap.

Nye, Hedges, and Konstantopoulos (2000) examined the benefits of smaller class sizes to determine whether class size had a larger positive effect for minority and disadvantaged students than for White students. They investigated kindergarten through third grade students in a Tennessee class size project called the Student-Teacher Achievement Ratio (STAR) experiment. Students were randomly assigned to small classes (13-17 students) or large classes (22-26 students). An analysis of class size with math and reading, as well as ethnicity, gender and socio-economic status, was utilized to establish which independent variable had a positive effect for minority learning. Across schools, small classes were more beneficial to minority students than to White students. Kindergarten math was the one area for minority students that did not have a statistically significant effect. Nye et al. (2000) estimated that minority students in small classes experienced a larger effect (54-86%) in academic reading success than White students. For

mathematics, minority students experienced a smaller effect (8-13%) in academic success than their White counterparts.

Barton (2002) reported an analysis of data from the National Assessment of Educational Progress of 36 states and the differences present between White, minority, and students who qualified or did not qualify for free and reduced lunches. Students' scores from the NAEP in math in both 1992 and 2000 were analyzed for fourth grade and NAEP math scores in both 1990 and 2000 for eighth grade were evaluated. According to Barton, the overall analysis of mathematical data was "encouraging" (p. 1). Results for differences in fourth grade revealed 2 out of 36 states (North Carolina and Georgia) reduced the achievement gap between White students and non-White students and only one state (Connecticut) reduced the gap between students who were or were not eligible for free and reduced lunches. In contrast, in eighth grade, no changes were present in the achievement gap between ethnicity and students who qualified or did not qualify for free and reduced lunches (Barton, 2002).

Abedi and Hejri (2004) examined the difference in achievement between students who were Limited English Proficient who were accommodated and students who were non-LEP and were not accommodated. They analyzed students' scores who were LEP from three separate samples: 1992 (inclusion without accommodations), 1996 (inclusion criteria without accommodations), and a third sample from 1996 (inclusion criteria with accommodations). The National Assessment of Educational Progress main assessment (i.e., Writing, Reading, and Civic Assessment) was used from the 1996 and 1998 school years for fourth and eighth grade. No statistically significant difference was present in the scores between students who were accommodated from students who were not accommodated in either grade level or subject assessment. Abedi and Hejri (2004) concluded that the validity of the NAEP was not altered or compromised due to the accommodations of students who were LEP.

Bali and Alvarez (2004) reported academic achievement gaps among 22 elementary schools among students who were Hispanic, Black, and White, within a California school district. Analyzing grades 1 through 4 in math and reading, the researchers concluded that achievement gaps develop for Black students and White students, as well as Hispanic students and White students. Bali and Alvarez (2004) determined the achievement gap between Hispanic students and White students developed in later grades, compared to the achievement gap between Black students and White students which developed in the early grades.

Researchers who investigated academic achievement and summer learning concluded that students lose large amounts of learning in the summer and fall behind in the fall semester (Allington & McGill-Franzen, 2003; Entswisle & Alexander, 1992). Kim (2004) evaluated how reading four to five books during the summer increased fall reading achievement scores among ethnic groups. Students were given a criterion-referenced test and a summer survey to complete to establish pre-skill differences before and after summer reading. Kim reported that Latino students had the most difficulty in accessing books to read during the summer. A greater percentage of White students (45%) and Asian students (34%) wrote about the books they read compared to Latino students (16%) and Black students (18%). The number of books read during the summer was positively correlated with fall reading achievement. Overall, Asian students read more books than White students and White students read more than Black students and Latino students combined.

Rabiner, Murray, Schmid, and Malone (2004) investigated academic achievement and the relationship between attention problems and ethnicity. Thirty-eight teachers rated 621 students using a 5-scale Likert survey for academic achievement and the Conner's Teacher rating scale (CTRS-R:L) to determine whether ethnicity was related with behavioral issues. Rabiner et al. (2004) determined White students had statistically significantly higher achievement than students who were Black when ethnicity was examined in relation to academic achievement and behavior. Black students had higher achievement ratings than did Hispanic students. In relation to academic achievement and problems with attention in class, Black students had statistically significant outcomes for inattentive behavior in the classroom, which is associated with academic achievement.

Konstantopolous and Hedges (2005) reviewed differences in achievement between Hispanic and White students by analyzing six national surveys of students in grades 1, 3, 6, 9, and 12. Regarding Hispanic and White students, the differences in academic achievement for the six national surveys ranged from 0.91 *SD* to 0.53 *SD* in reading and 0.77 *SD* to 0.56 *SD* for mathematics. White students outperformed Hispanic students

in both subject areas. From 1965 to 1992, ethnic differences in achievement decreased in both reading and math scores. Konstantopolous and Hedges (2005) also concluded that socioeconomic status affected the achievement gap between ethnicities, albeit a small effect size. The achievement gap was greatest for Puerto Rican and Mexican students within ethnic groups and smallest for Cuban students.

Balfanz and Byrnes (2006) investigated high poverty middle schools and the success that was achieved in closing the gap in mathematics. In the study, the researchers examined 23 high-poverty middle schools which did not implement the Whole School Reform (WSR) in the Philadelphia school district and three high-poverty middle schools that did incorporate the WSR program. The three high-poverty schools that implemented the Whole School Reform (WSR) outperformed the 23 high-poverty, minority schools that did not implement WSR (overall gain +3.2 points).

Carpenter, Ramirez, and Severn (2006) examined differences in achievement within ethnic minority groups. The researchers analyzed math achievement data from the National Center for Educational Studies (NCES:88). Over 15,000 Grade 12 students from Hispanic, Black, or White ethnic backgrounds were included in the study. A multiple regression of students resulted in a "stair step of achievement" where White students outperformed Hispanic students who outperformed Black students (p. 117). Carpenter et al. (2006) also concluded that math achievement increased as socio-economic status, parental involvement, and time spent on homework increased within family households.

Researchers have established that students who were limited in language proficiency had greater difficulty in reading achievement (Allington & McGill-Franzen, 2003) than students who were non-LEP. Ready and Tindal (2006) analyzed data from the Early Childhood Longitudinal Study, Kindergarten cohort of 1998-1999 (ECLS-K) to determine language status and children's acquisition of information within a school setting. Students were separated into groups according to the following language criteria: non-language minority, language minority proficient, language minority, non-proficient Asian language minority proficient, and other language minority proficient (White, Black, Native American, and multi-racial) children whose first language was not English. Hispanic language minority proficient students entered kindergarten with an academic disadvantage, with a *SD* of 0.43 in comparison to non-language minority students and a disadvantage of 0.59 *SD* in math. Although Hispanic language minority proficient students narrowed the gap in first grade (0.31 *SD*), the achievement gap remained. In math the achievement gap narrowed (0.37 *SD*) during kindergarten, but stabilized in first grade (0.41 *SD*). Ready and Tindall (2006) also examined socio-demographic background in relation to achievement. They concluded that Hispanic language minority proficient and language minority non-proficient students were the most economically disadvantaged of all kindergarten students. Language minority proficient students from Hispanic homes were nearly three times more likely to come from impoverished homes and five times more likely than native speakers to come from low socio-economic homes than other language minority proficient students.

Foster and Miller (2007) examined factors that influence students' phonics and early comprehension skills from kindergarten through third grade. A total of 12,261 White, Hispanic, Black, and other minority groups were divided into three literacy readiness groups: high, average, and low. Students were placed in groups according to their performance on the literacy assessment. If students scored one standard deviation below the mean, they were placed in the low group. Students who scored one standard deviation above the mean score were placed in the high group. An analysis of variance resulted in statistically significant findings for students who were in the high and average performing groups. Both groups scored the highest in decoding in first grade. The low performing groups did not achieve the same level of performance until third grade. In relation to parent education and income, poverty level was more prevalent in the low performing groups (33%) than high performing groups. The researchers reported 55% of the low performing group had parents who had a high school diploma, compared to 91% of the students in the high performing group. Hispanic and Black students were "overrepresented" in the low performing groups (p. 179).

Jeynes (2007) evaluated religion, family involvement, SES, and how these factors affected academic achievement between White students and minority students. The National Education Longitudinal Survey (NELS:88) and a meta-analysis were utilized by Jeynes to establish factors that influenced academic achievement. Results were that students in religious schools who were in the lowest SES quartile achieved higher test scores (from 5.4 to 8.2% higher) on standardized tests than students who were in public schools in the

same SES category. Students in religious schools came from families that were highly religious and intact. When considering ethnic status, Hispanic and Black students in religious schools scored 8.3% higher than their counterparts in public schools. Jeynes (2007) concluded that students who attended religious schools from lower SES benefited by 5.1% to 5.7% more on standardized tests than their counterparts in public schools.

Reading improvement and academic achievement among minority students was evaluated by Erickson (2008) in a study conducted to determine whether the Intensive Reading Program increased student achievement. Erickson examined three cohorts from the 2002-2003, 2003-2004, and 2004-2005 school years. The Iowa Tests of Basic Skills for reading comprehension subtest was given to all students in the fall and again in the spring. The Intensive Reading Program was introduced to help students improve their achievement in reading comprehension. Statistically significant increases were present in mean scores for all three cohorts after taking the pre-post Iowa Tests of Basic Skills. For the 2002-2003 year Hispanic students had the largest mean gain (21.5) followed by White students (19), African American students (17), and Asian students (4). For the 2003-2004 school year, Asian American students total mean gain was the highest (35.2), followed by Native American students (35), White students (25.7), Latino students (22.5), and Black students (22.2). For the 2003-2004 school year, Asian American students made the largest gain (31.3), followed by Latino students (26.6), African American students (24.6), White students (23.4), and Native American students (13.6).

Lleras and Rangel (2009) discussed the effects of assigning Hispanic and Black students in low ability groups and how they compared to high ability grouped students in academic achievement. Students in ability groups were also compared to students who were not grouped by ability and how they performed in academic achievement in reading. Lleras and Rangel (2009) examined first and second follow-up surveys from the ECLS-K of students who were first graders and the 2001-2002 follow-up survey of third graders. Students who were placed in groups demonstrated lower academic achievement than students who were either placed in high ability groups and students who were not placed in groups in both first and third grade. Overall, students who were not placed in groups outperformed both African American and Hispanic students. Hispanic students outperformed Black students in third grade reading achievement.

Grimm (2008) analyzed the relationship between developmental reading in early elementary and math achievement among students who were either White or non-White. The Iowa Test of Basic Skills from third to eighth grade was used as the dependent variable to act as a predictor of growth and progress in math. Results of the analysis revealed that Black males demonstrated slower developmental reading rate, which affected their math achievement in problem solving and data interpretation. Hispanic and Black males demonstrated delayed changes in reading development and showed slower proficiency in mathematical computations. Finally, for mathematical concepts and estimations, Hispanic and Black males demonstrated prolonged rates of development in reading, which delayed progress in math achievement in later grades.

An analysis of data from the Early Childhood Longitudinal Study (Kindergarten cohort, 1998-1999) demonstrated differences for math achievement between White and minority students (i.e., Asian-American, Black, and Hispanic) (Cheadle, 2008). In relation to the achievement gap between Black and White students, Black students entered kindergarten with a 0.34 *SD* or 2.5 points lower than their White counterparts. Similarly, a Hispanic-White achievement gap of 0.45 *SD* or 3.3 points lower than White students and 0.8 points lower than Black students was present. In contrast, Asian-American and White students did not have a statistically significant difference in achievement upon entering kindergarten.

Achievement gaps between White students and minority children are evident even before children enter their first day of school. Wang (2008) examined data on 4-year old children who participated in the Early Childhood Longitudinal Study-Birth Cohort (ECLS-B) and how minority children compared to White children in the following areas: language knowledge and skills, literacy knowledge and skills, and mathematics knowledge and skills. Mean differences for all areas were statistically significant. White students outperformed Hispanic students and Black students. Hispanic 4-year old students had the highest achievement gap compared to White students in overall math, literacy language knowledge, literacy and fine motor skills. Asian children scored higher than White students in all areas, with the exception of reflective vocabulary knowledge and skills.

Brown-Jeffy (2009) investigated the race gap and its influence on math achievement between minority and non-minority students. Using the High School Effectiveness Study data of over 3,000 students, Brown-Jeffy concluded that when half of the students in public schools were Hispanic or Black, all students, including White, in the school have lower academic achievement. Schools with over 30% to 49% of students who were Hispanic or Black had an "egalitarian" academic achievement between Hispanic students and White students (Brown-Jeffy, 2009, p. 388).

Konstantopoulous and Chung (2009) evaluated long-term effects of small classes in relation to students and academic achievement gaps. They examined data from Project STAR and the Lasting Benefits Study, in math, reading and science scores. Konstantopoulous and Chung (2009) concluded that students benefited greatest from small classes in later grades. Higher grades and smaller achievement gaps were produced the earlier the student was enrolled in small classes.

Analyses of data are summarized in the following table. Readers are referred to Table 1 for a summary of quantitative articles pertaining to achievement gaps among White and non-White groups.

Table 1

Summary of Research Regarding Gaps Between White, Minority, or Students with LEP and Academic Achievement

Author	Sample size (n)	Dependent variable	Outcome	Groups
Entwise & Alexander (1992)	First winter (n = 542); First summer (n = 490); Second winter (n = 464); & Second summer (n = 430)	CAT for grades 1-3 for mathematics	Black gains in segregated or integrated schools were the same, but gained less during the summer	Differences between Whites in segregated and non-segregated schools were non-existent; Differences for minorities who attended segregated schools were that they gained significantly less than White students
Ivory (1993)	18, 290	TAAS Math 11th grade Exit-level Texas	Passing rate for Whites was 79%; passing rate for Hispanics was 48%; and the passing rate for Black was 40%	Whites outperformed Hispanics, who outperformed African Americans
Bankston & Caldas (2000)	36,561 students; 347 schools; 71 school districts in Louisiana	1990 U.S. Census of Population & Housing; 1990 Annual Statistical and Financial Report; 1990 Louisiana Graduation Exit Exam	The more White students enrolled in nonpublic schools, the greater the amount of minorities are enrolled in public schools	Individual test scores tend to be lower in districts where there are less White students in public schools; White-minority gap is greater for districts with less White students in public schools
Nye, Hedges, & Konstantopoulos (2000)	Kindergarten (n = 6,325); First grade (n = 6,829); Second grade (n = 6,840); Third grade (n = 6,802)	Project STAR (Tennessee class size experiment)	Small class sizes for minority students were more beneficial than for Whites in both reading and math	Small class sizes were more beneficial for female minorities than males; more beneficial for low socioeconomic students than high SES; and for overall minorities, except kindergarten mathematics
Barton (2002)	NAEP data set for 36 states in mathematics for 4th grade scores for 1992 & 2000; 8th grade scores for both 1990 & 2000	NAEP detail change for 4th grade & 8th grade mathematic scores	Overall results for all states were encouraging in Mathematics; However, the performance gaps were not reduced between majority or minority students and between students who received free or reduced price lunches	In fourth grade, only two states reduced the achievement gap between Whites and non-Whites, & only one state reduced the gap between students eligible and not eligible for free or reduced price lunches; In eighth grade, no states reduced the gap and two states increased the achievement gap in mathematics

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Abedi & Hejri (2004)	829 students who were LEP	Effect and validity of accommodations in the NAEP	Accommodations did not reduce the performance gap between LEP and Non-LEP students	Accommodations were not statistically significant for students who received accommodations
Bali & Alvarez (2004)	1147-1221 students in a fourth grade cohort	Math and Reading database for the Pasadena Unified School District	The racial gaps between White and African American students, as well as White and Hispanic students developed at different grade levels	Overall, White students outperformed Hispanic students and African American Students
Kim (2004)	18 elementary schools (n = 1687)	Reading and writing proficiency was established with a criterion-referenced test; Summer reading survey	Students were measured by low, medium and high reading for summer, as a function of ethnicity; Latino students reported (33%) difficulty to accessing books	Whites (45%) and Asians (34%) wrote story about their summer reading compared to Latinos and Black; Asians read more than Whites; Whites read more than Blacks and Latinos
Rabiner, Murray, Schmid, & Malone (2004)	38 teachers and 621 students	5 point Likert scale on academic achievement and the Conner's Teacher Rating Scale (behavior rating scale)	Teachers report of academic achievement as a function of ethnic differences as behavior, gender were analyzed	Teachers reported Black students have higher rates of inattention, hyperactivity and oppositional behavior than Whites or Hispanics and is associated with academic achievement

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Konstantopoulos & Hedges (2005)	EEO (n = 96,660); NLS (n = 16,860); HS&B-80 (n = 25,060); HS&B-82 (n = 26,212); NLSY (n = 1,184); NELS-88 (n = 24,599)	EEO; NLS; HS&B-80; HS& B-82; NLSY; & NELS-88	Analyzing the six surveys, authors concluded that racial differences existed, but had decreased over time	Overall, Whites outperformed Hispanics in both reading and math; Hispanic and White achievement gap was reduced over time & SES was an important factor that affected achievement, although it had a small effect size
Balfanz & Byrnes (2006)	Philadelphia School District data for 3 cohorts, over a 6-year period	Math PSSA achievement test for 5th to 8th grade minority students	Schools who implemented the Whole School Reform made greater progress compared to other high poverty schools	The three schools that implemented the WSR outperformed the 23 high poverty schools that did not implement WSR
Carpenter, Ramirez, & Severn (2006)	15,618 students	NES:88 math achievement test	Stair-step achievement: Whites outperformed all minorities	Whites outperformed Hispanics, who outperformed Blacks
Ready & Tindall (2006)	10,425 Language Minority students who were Asian, Black, Hispanic & other	ECLS-K 1998-1999; telephone interviews; individually administrated, untimed cognitive tests	Hispanic LM entered kindergarten with fewer academic skills; Hispanic LM enter school with disparate levels of academic achievement compared to Asian LM, and non-LM children	Hispanic LM children entered kindergarten with a 0.43 SD disadvantage in literacy skills; a 0.59 SD disadvantage in math; Overall, Asian non-LM enter kindergarten with a 4.07 literacy gain over their White peers
Foster & Miller (2007)	1998-1999 Early Childhood Longitudinal Study (n = 12,261)	ECLS-K literacy assessment for Kinder through 3rd grade	Parent education, income contributed to students' ability to progress in reading	High achievement group outperformed average achievement group, that outperformed low achievement group

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Jeynes (2007)	NELS:88 (n = 24,599)	NELS:88	Students from low socioeconomic status and students of color benefit from attending religious schools	African American and Latino students who attended religious schools varied 8.3% higher than their public school counterparts in Math, Social Studies and Test Composite & 6.0% higher in Science
Erickson (2008)	Three cohort groups cohort 2002-2003 (n = 144); 2003-2004 (n = 266); & 2004-2005 (n = 272)	ITBS reading comprehension subtest and the IR Program	A statistically significant increase in the mean score for all 3 cohort years	For mean gains, for 2002-2003, Latinos had the highest mean score than other ethnic group; for 2003-2004, Asian-Americans had the highest mean score compared to other ethnic groups; for 2004-2005, Asian Americans made the greatest gains in mean score
Lleras & Rangel (2008)	Black (n = 750) Hispanic (n = 886)	Overall effects of ability grouping on reading achievement gains using the ECLS-K and 3rd grade: 1998-2002	Blacks gains in third grade were 0.23 SD; gains for Hispanics were 0.15 SD below non-grouped students	Non-grouped students outperformed Hispanic and African American students. Hispanic students outperformed Black students in reading
Grimm (2008)	46,098 Chicago Public School students	ITBS from third to eighth grade	For reading and math achievement, development, poverty, gender, and ethnicity impacted achievement scores	Females outperformed males in third grade; Black students had a lower development than White students and Hispanic students

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Cheadle (2008)	14,152 cases	EC LS-K class of 1998-1999	Hispanic-White gap was at 3.3 points or 0.45 SD	White students outperformed Hispanic students
Wang (2008)	8,750 children between the ages of four year old	Early Childhood Longitudinal Birth Cohort; math & knowledge skills, literacy knowledge & skills, language knowledge & skills, expressive language and early reading knowledge & skills	Hispanics mean difference in all measured areas ranged from -0.2 to -4.1, a statistically significant indicator that Whites outperformed Hispanics	Whites outperformed all minorities, except Asians; Hispanics had the largest achievement gap in all areas
Brown-Jeffy (2009)	3,392 students; 177 total schools	The Item Response Theory Estimated Number Right Score	In schools, when 50% of students were Black or Hispanic, achievement for all students was lower (including White students) in mathematics	White students outperformed Hispanic students; gap is increased when minority teachers are teaching math; students SES is the greatest indicator for math achievement
Konstantopoulos & Chung (2009)	Students in grade 4-8 who were followed for 5-years	Project Star (A Tennessee large scale, randomized experiment)	White students' achievement in math, reading and science in small classes was greater than minority students	White students outperformed minority students; High socio-economic status students outperformed low socio-economic students

[7]

1.11 Summary

Discussed in this conceptual analysis were the results of numerous studies in which the achievement gap and related variables were analyzed. Educational equity in elementary schools, in particular, where the educational process begins for all students was discussed. Also demonstrated was the continued presence of an achievement gap among Whites, non-Whites, and students with a label of Limited English Proficient, regardless of the accountability mandated by the NCLB Act. Researchers who analyzed data from pre-kindergarten through high school have repeatedly documented the academic achievement discrepancies between and among White, non-White, and students with a label of Limited English Proficient. Regardless of additional money, resources, and qualified personnel, minority studies are performing much more poorly than their White counterparts. We hope that, through this article, we have provided an overview of the empirical research in a way that will assist policy makers, administrators, and educators in making cognizant resolutions regarding the minimization of the achievement gap.

1.12 References

Due to the size and number of references, the Editors have chosen to display as a PDF to maintain the original format of the authors. Click here to access the The Reference Section.[8]

[7] http://cnx.org/content/m41405/latest/Slide5.png/image
[8] See the file at <http://cnx.org/content/m41405/latest/Lebouef_References.pdf>

Chapter 2

Reading and Math Differences Between Hispanic and White Students in Texas: A 16-Year Analysis[1]

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2.1 Sumario en espanol

Analizamos el punto hasta que diferencias fueron presentes entre estudiantes Blancos y estudiantes hispanos en sus tasas pasajeras en leer y en matemáticas sobre un período de tiempo de 16 años a través de todos los escuelas de enseñanza primaria de Tejas (N> 1.000 escuelas). Como estudiantes anticipados y Blancos tuvieron estadísticamente apreciablemente pasando más alto las tasas en leyendo y las matemáticas para 16 años, con tamaño de efecto que recorren de grande a pequeño. El vacío del logro fue notablemente más grande en leer (es decir, efecto grande calibra) que en matemáticas (es decir, pequeño moderar tamaño de efecto). Aunque los esfuerzos a todo el estado y nacionales han sido aplicados durante los últimos 16 años, el vacío en tasas pasajeras todavía refleja una falta substancial de equidad.

NOTE: Esta es una traducción por computadora de la página web original. Se suministra como información general y no debe considerarse completa ni exacta.

About the Authors

[1] This content is available online at <http://cnx.org/content/m38297/1.3/>.
[2] http://www.ncpeapublications.org

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John R. Slate is a Professor at Sam Houston State University where he teaches Basic and Advanced Statistics courses, as well as professional writing, to doctoral students in Educational Leadership and Counseling. His research interests lie in the use of educational databases, both state and national, to reform school practices. To date, he has chaired and/or served over 100 doctoral student dissertation committees. Recently, Dr. Slate created a website Writing and Statistical Help[4] to assist students and faculty with both statistical assistance and in editing/writing their dissertations/theses and manuscripts.

2.2 Introduction

The concept of equity in academic achievement for all students, regardless of ethnicity, is an issue that has captured the attention of politicians, educators, and the federal government since the 1960s with the implementation of the Elementary and Secondary Act of 1965 (Frankenbeg & Lee, 2002; Yell & Drasgow, 2005). The Elementary and Secondary Act (ESEA) was soon followed by the report, A Nation at Risk, in which the low achievement levels of students within the American school system were detailed (A Nation at Risk, 1983). In 2001, the No Child Left Behind Act (NCLB) was created and signed into law (No Child Left Behind, 2002).

The No Child Left Behind Act is based on "four key principles which grants greater accountability and adaptability when using funds for schools, school districts and states; more freedom and power in selection of schools for disadvantaged parents; and greater options for teaching methodology, based on empirical research" (2002, p. 9). The aim of the NCLB Act was to create opportunities for all students to be successful, regardless of their academic background, ethnicity, or socio-economic status (No Child Left Behind, 2002; Yell & Drasgow, 2005). One intention behind the implementation of the NCLB Act was to increase state and local accountability, which therefore would ideally increase the equity of all subgroups on a national level by the school year 2013-2014.

The creation and implementation of the NCLB Act has generated both support and criticism of its effectiveness in decreasing the achievement gap between White students and ethnic minority students (Celeste & Stokes-Brown, 2009; Kim & Sunderman, 2005; Lee, 2002; Lee & Wong, 2004; Powers, 2004; Ravitch, 2009; Rothstein & Jacobsen, 2009; Schiller & Muller, 2003). Proponents of the law argue that the NCLB Act has been successful and has made a lasting effect in diminishing the achievement gap between White students and minority students (Weaver, 2006; Zavadsky, 2006). Researchers have documented the success of the NCLB Act and increased success of school districts across the nation (Jennings & Rentner, 2006; Miners, 2007; Mixed Reactions to NCLB, 2005; Packer, 2007; Zavadsky, 2006). Yet, critics have argued that the NCLB Act has been a burden to school districts, personnel, and students alike (Borkowski & Sneed, 2006; Frankenberg & Orfield, 2006; Jennings & Rentner, 2006; Lewis, 2007; Manzo & Hoff, 1997; Mixed Reactions to NCLB, 2005; Tyler, 2003; Zeus, 2007). Opponents of the NCLB Act, recognizing that test scores have increased, have commented that achievement is in relation to most schools' focus on test taking skills (Guilfoyle, 2006; Popham, 2007; Smyth, 2008) rather than a legitimate increase in achievement.

[3] http://www.writingandstatisticalhelp.com
[4] http://www.writingandstatisticalhelp.com

2.3 Theoretical Framework

Acquisition of language and literacy, specifically vocabulary, is the catalyst for future success and academic achievement in school (Kosmoski, Gay, & Vockell, 1990). The success of minority children in education stems from the knowledge and understanding of their family, community and societal influences (Tabors & Snow, 2001). To create academic achievement among students of minority backgrounds, educators must implement strategies that encourage family and communities to support educational success (Foster, 2004). To understand how to create educational success among minority students, an understanding of the dynamics within the community and culture must be demonstrated (Frankenburg, Lee, & Orfield, 2003). The understanding of culture and academic achievement has been conceptualized by Ogbu (1981) in the creation of the cultural-ecological (CE) theory.

Cultural-ecological theory is based on the premise that minorities' academic achievement is linked to their ethnicity and to their willingness to conform to their environment (Foster, 2004; Ogbu, 1981). In this theory, minority students have the capability to participate successfully with White students within the classroom and on standardized tests (Lynn, 2006). Differences in academic achievement are based on how the subgroup adapts and conforms to the dominant groups in educational principles (Ogbu, 1981). Ogbu (1981) further explained that conformity is chosen by minorities based on "competencies", which determines the amount of success one receives by "...abandoning or modifying substantially their competencies for achievement..." within the dominant society (p. 425). According to the CE theory, individuals from some subgroups "chose to conform", as long as the adaptation to the dominant group does not go against their "rules of behavior for achievement" within their own culture (Ogbu, 1981, p. 425).

2.3.1 Purpose of the Study

The purpose of this study was to examine differences in academic achievement among students who were White or Hispanic using archival data from the Texas Education Agency's (TEA) Academic Excellence Indicator System (AEIS). Data examined were fifth grade reading and math passing rates from the 1993 through the 2009 school years. The fifth grade TAKS test is a component of the Student Success Initiative (SSI) which by law requires students to take the Math and Reading assessment and pass with at least a certain percentage rate to be qualified to advance to the next grade level (Student Success Initiative, n.d.). An examination of the Texas Assessment of Knowledge and Skills (TAKS) Reading and Math tests, as well as the Texas Assessment of Academic Skills (TAAS) Reading and Math tests across a 16-year period assisted in determining the extent to which an achievement gap was present and whether the achievement gap had declined, if any, and the extent to which equity had been established using statewide standardized assessment for students who were White or Hispanic.

2.3.2 Research Questions

The following research questions were addressed in this study: (a) What is the difference in passing rates in reading between White students and Hispanic students in elementary school?; (b) What is the difference in passing rates in math between White students and Hispanic students in elementary school?; (c) What trends, if any, are present in the achievement gap in reading passing rates between White students and Hispanic students in elementary school?; and (d) What trends, if any, are present in the achievement gap in math passing rates between White students and Hispanic students in elementary school? The first two research questions were repeated for the 16 years of data analyzed in this study.

2.4 Method

2.4.1 Participants

Participants for this study were selected from the Texas Education Agency Academic Excellence Indicator System which collects and stores data pertaining to the TAKS and TAAS standardized examinations. Par-

ticipants were chosen for this study based on their ethnicity (i.e., White or Hispanic) and involvement in the fifth grade Reading and Math TAAS or TAKS examination scores from the most recent 16 school years (i.e., 1993-1994 through 2008-2009). Fifth grade was selected because students are required to complete the TAAS or the TAKS, when it was administered in the spring of each year. As stated previously, the fifth grade state-mandated assessment is a component of the Student Success Initiative which by law requires students to take the Math and Reading assessment and pass with at least a certain percentage rate to be qualified to advance to the next grade level (Student Success Initiative, n.d.).

The number of schools in the State of Texas that reported passing rates in reading and in math of White students and of Hispanic students varied by school year. Texas does not permit the release of information that might allow students to be identified. The requirements for sample sizes to release student information are set in accordance with the Family Education Rights and Privacy Act. Thus, in cases where all Hispanic students at a school obtained a passing score in reading or in math, their data would not be publically available. Similarly, when small numbers of Hispanic students were present at a school, their data would also not be made publically available. Sample sizes of schools are present in Tables 1 through 6. In every case, the sample size for each statistical analysis was over 1,000 schools. Readers should note that the data analysis were aggregated data at the elementary campus level. As such, specific demographic information regarding student characteristics other than Hispanic or White were not available.

2.4.2 Instrumentation

Archival data collected through the Academic Excellence Indicator System across a 16-year time period (i.e., 1993-2009) was used to determine the extent to which an achievement gap existed between Hispanic students and White students. The Academic Excellence Indicator System is a composite of information pertaining to all students in the state of Texas. This information was first compiled in 1984 in response to the achievement gap between White students and non-White students and accountability within schools and districts across Texas (Academic Excellence Indicator System, http://ritter.tea.state.tx.us/perfreport/aeis/about.aeis.html). Each year, annual reports are added to the AEIS website and the performance of students are reported in the following areas: results of the TAAS and the TAKS tests; passing rates of students; attendance rates; progress prior year TAKS failures; Exit-level TAKS cumulative passing rates; annual drop out rates; completion rates; and college readiness indicators (Academic Excellence Indicator System, http://ritter.tea.state.tx.us/perfreport/aeis/about.aeis.html[5]). With the objective of this research study being to examine differences in academic achievement between Hispanic students and White students, data downloaded were the passing rates on the TAKS Reading and Math exams by ethnic membership as well as the TAAS Reading and Math exams by ethnic membership.

According to the Texas Education Agency, the Texas Assessment of Knowledge and Skills (TAKS) passing standard for reading and math in the fifth grade are as followed:

2.4.2.1

In reading, 40 is the total possible points given to a student to receive 100% passing rate and 28 points for students to receive 70% passing rate; and in writing, 32 is the total possible point that are given to a student to receive 100% passing rate and 18 points for students to receive 56% passing rate (http://ritter.tea.state.tx.us/perfreport/aeis/2008/glossary.html#appendf[6]).

The State of Texas sets the score for what is considered to be a passing rate, based upon its analysis of item difficulty and student performance, separately for the reading and for the math exams.

[5] http://ritter.tea.state.tx.us/perfreport/aeis/about.aeis.html
[6] http://ritter.tea.state.tx.us/perfreport/aeis/2008/glossary.html#appendf

2.5 Results

After checking the assumptions for normality for students' TAKS and TAAS reading scores and their math scores, it was determined that the datasets for all 16 years of data demonstrated evidence of non-normality. That is, the standardized skewness coefficients (i.e., the skewness value divided by its standard error) and the standardized kurtosis coefficients (i.e., the kurtosis value divided by its standard error) were almost all outside of the boundaries of +/- 3 (Onwuegbuzie & Daniel, 2002). The most likely reason for these students' TAKS Reading and TAKS Math scores being non-normal is due to the content assessed on these tests being taught in Texas classrooms. Test items on the TAKS are designed to assess the information and skills taught in classroom settings. As such, 50% of the test scores would not be expected to be average or below, on content specifically taught to students. A final explanation is that in norm-referenced measures, student performance is compared to the performance of other peers. In the case of the two TAKS measures, student performance is compared to the number of items answered correctly. Each item receives a specific point value. Students, as noted above, who receive 40 points in Reading are rated as having passed the exam.

Because student achievement data were not normally distributed, nonparametric procedures were utilized to answer the research questions delineated above. Nonparametric procedures do not have as an assumption that test scores are normally distributed. As such, they are the optimal statistical procedure to use when the assumption of normality of data is violated.

In regard to the 2008-2009 academic year, the Wilcoxon signed-rank test revealed the presence of statistically significant differences in passing rates in reading between Hispanic students and White students, z = -26.18, $p < .001$, and in passing rates in math, z = -21.96, $p < .001$. Effect sizes were large, with a Cohen's d of 0.93 for the reading pass rate difference, and moderate, with a Cohen's d of 0.61 for the math pass rate difference (Cohen, 1988). Hispanic students averaged 8.89% points lower in their reading pass rates and 6.73% points lower in their math pass rates than White students.

Because of the space required to report in detail all of the statistical analyses conducted in this study, only the following information will be provided. Readers are requested to contact the authors directly for the detailed numeric phrases for each analysis. Statistically significant differences were yielded at the .001 level, using the Wilcoxon signed-rank test, in reading and in math between Hispanic and White students for the other 15 years of data analyzed. Effect sizes are depicted for each analysis in Tables 9 and 10, along with the mean difference in student passing rate.

Descriptive Statistics for Passing Rates in Reading and in Math for Hispanic Students and

for White Students for the 2008-2009 and 2007-2008 School Years

2008-2009 School Year	*n* of schools	*M*	*SD*
Reading Pass Rates			
Hispanic Students	1,544	80.17	10.68
White Students	1,544	89.06	8.30
Math Pass Rates			
Hispanic Students	1,518	80.69	11.80
White Students	1,518	87.42	10.32
2007-2008 School Year			
Reading Pass Rates			
Hispanic Students	1,463	81.33	10.40
White Students	1,463	89.79	7.66
Math Pass Rates			
Hispanic Students	1,464	81.25	11.09
White Students	1,464	88.48	9.14

Table 2.1

Descriptive Statistics for Passing Rates in Reading and in Math for Hispanic Students and White Students for the 2006-2007 and 2005-2006 School Years

2006-2007 School Year	*n* of schools	*M*	*SD*
Reading Pass Rates			
Hispanic Students	1,459	77.51	11.71
White Students	1,459	89.02	9.01
Math Pass Rates			
Hispanic Students	1,487	82.05	10.75
White Students	1,487	87.93	8.85
2005-2006 School Year			
Reading Pass Rates			
Hispanic Students	1,565	75.91	11.72
White Students	1,565	87.80	8.91
Math Pass Rates			
Hispanic Students	1,501	77.40	12.60
White Students	1,501	87.20	10.26

Table 2.2

Descriptive Statistics for Passing Rates in Reading and in Math for Hispanic Students and White Students for the 2004-2005 and 2003-2004 School Years

2004-2005 School Year	*n* of schools	*M*	*SD*
Reading Pass Rates			
Hispanic Students	1,661	69.92	13.32
White Students	1,661	84.88	9.73
Math Pass Rates			
Hispanic Students	1,580	74.91	13.42
White Students	1,580	85.92	10.16
2003-2004 School Year			
Reading Pass Rates			
Hispanic Students	1,569	73.55	12.96
White Students	1,569	86.83	9.28
Math Pass Rates			
Hispanic Students	1,497	76.49	13.15
White Students	1,497	87.17	9.96

Table 2.3

Descriptive Statistics for Passing Rates in Reading and in Math for Hispanic Students and White Students for the 2002-2003 and 2001-2002 School Years

2002-2003 School Year	*n* of schools	*M*	*SD*
Reading Pass Rates			
Hispanic Students	1,967	77.80	13.98
White Students	1,967	88.39	9.80
Math Pass Rates			
Hispanic Students	1,980	85.14	12.66
White Students	1,980	92.45	8.60
2001-2002 School Year			
Reading Pass Rates			
Hispanic Students	1,365	92.23	8.19
White Students	1,365	96.29	5.65
Math Pass Rates			
Hispanic Students	1,378	96.42	5.67
White Students	1,378	97.92	4.07

Table 2.4

Descriptive Statistics for Passing Rates in Reading and in Math for Hispanic Students and White Students for the 2000-2001 and 1999-2000 School Years

2000-2001 School Year	*n* of schools	*M*	*SD*
Reading Pass Rates			
Hispanic Students	1,982	88.38	10.29
White Students	1,982	94.62	6.47
Math Pass Rates			
Hispanic Students	1,985	94.35	7.60
White Students	1,985	96.98	5.14
1999-2000 School Year			
Reading Pass Rates			
Hispanic Students	1,937	85.12	12.50
White Students	1,937	93.66	7.20
Math Pass Rates			
Hispanic Students	1,941	91.37	9.36
White Students	1,941	95.72	6.04

Table 2.5

Descriptive Statistics for Passing Rates in Reading and in Math for Hispanic Students and White Students for the 1998-1999 and 1997-1998 School Years

1998-1999 School Year	*n* of schools	*M*	*SD*
Reading Pass Rates			
Hispanic Students	1,847	84.34	12.55
White Students	1,847	92.57	7.97
Math Pass Rates			
Hispanic Students	1,857	89.64	10.19
White Students	1,857	94.32	7.19
1997-1998 School Year			
Reading Pass Rates			
Hispanic Students	1,778	85.93	12.36
White Students	1,778	93.41	7.66
Math Pass Rates			
Hispanic Students	1,781	88.44	11.49
White Students	1,781	93.86	7.36

Table 2.6

Descriptive Statistics for Passing Rates in Reading and in Math for Hispanic Students and White Students for the 1996-1997 and 1995-1996 School Years

1996-1997 School Year	*n*	*M*	*SD*
Reading Pass Rates			
Hispanic Students	1,764	80.47	14.04
White Students	1,764	91.42	8.95
Math Pass Rates			
Hispanic Students	1,759	83.29	14.07
White Students	1,759	91.73	9.23
1995-1996 School Year			
Reading Pass Rates			
Hispanic Students	1,695	78.14	14.86
White Students	1,695	89.47	9.62
Math Pass Rates			
Hispanic Students	1,694	74.39	16.64
White Students	1,694	86.50	11.30

Table 2.7

Descriptive Statistics for Passing Rates in Reading and in Math for Hispanic Students and White Students for the 1994-1995 and 1993-1994 School Years

1994-1995 School Year	*n*	*M*	*SD*
Reading Pass Rates			
Hispanic Students	1,680	74.85	15.80
White Students	1,680	86.56	10.85
Math Pass Rates			
Hispanic Students	1,677	67.31	17.87
White Students	1,677	80.85	13.74
1993-1994 School Year			
Reading Pass Rates			
Hispanic Students	1,688	72.12	15.19
White Students	1,688	85.73	10.79
Math Pass Rates			
Hispanic Students	1,698	54.19	19.14
White Students	1,698	71.82	15.80

Table 2.8

2.5.1 Trends

Reading. For the 16-year time period, the trend concerning the differences in passing rates in reading between Hispanic students and White students in elementary school revealed a continuous achievement gap. Passing rates in reading for White students averaged 6.73% to 30.87% higher than the average passing rates for Hispanic students over the 16-year time period. The differences in passing rates in reading between Hispanic students and White students were evident in the initial 1993-1994, 2002-2003, and 2004-2005 testing years. During the 1992-1993 school year within the state of Texas, differences may be explained with the transition of TAAS testing from the fall to the spring, as well as the implementation of the TAAS tests for students in grades 4 through grades 8, and a new accountability measure for districts and campuses alike (http://ritter.tea.state.tx.us/student.assessment/resources/studies/testingtimeline.pdf).

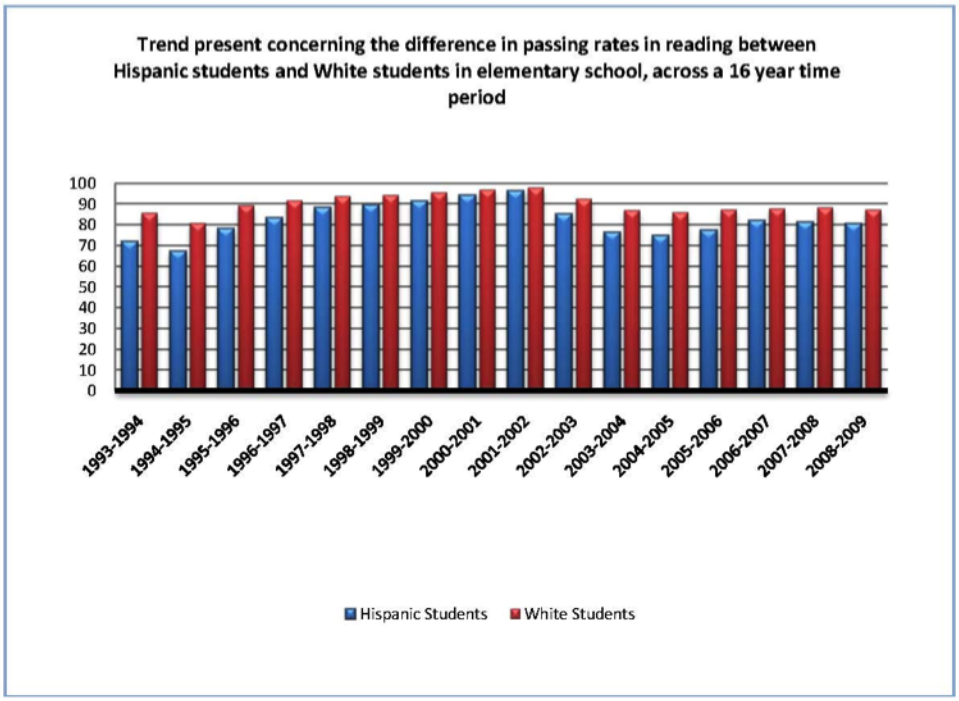
Effect Sizes in Reading Over a 16-Year Time Period

Years	*M* Difference	*d*	Effect Size Range
2008-2009	8.89	0.93	Large
2007-2008	8.46	0.93	Large
2006-2007	11.51	1.10	Large
2005-2006	11.89	1.41	Large
2004-2005	14.96	1.28	Large
2003-2004	13.28	1.18	Large
2002-2003	10.59	0.88	Large
2001-2002	4.06	0.58	Moderate
2000-2001	6.24	0.73	Moderate
1999-2000	8.54	0.84	Large
1998-1999	8.23	0.78	Near-Large
1997-1998	7.48	0.73	Moderate
1996-1997	10.95	0.93	Large
1995-1996	11.33	0.91	Large
1994-1995	11.71	0.79	Near-Large
1993-1994	13.61	1.03	Large

Table 2.9

Differences in passing rates between Hispanic students and White students were also discernible during the 2002-2003 school year, which coincided with the signing of the No Child Left Behind Act. As mentioned previously, this law was enacted to bring stricter accountability for school campuses and districts, as well as 100% passing rates for all students by the 2013-2014 school year. The greatest difference in achievement between Hispanic students and White students was evident during the 2003-2005 school years. This wide discrepancy in passing rate between students corresponded with the administration of the Texas Assessment of Knowledge and Skills test (http://ritter.tea.state.tx.us/student.assessment/resources/studies/testingtimeline.pdf). By the 2005-2006 school year, the mean difference between both groups began to decline and continued to decline through the 2008-2009 school year. The smallest gap occurred during the 2001-2002 school year (4.06%). Readers are referred to Figure 1 for the trend that was present concerning the difference in passing rates in reading between Hispanic students and White students in elementary school, across a 16-year time period.

Figure 1. **Trend Present Concerning the Difference in Passing Rates in Reading between Hispanic Students and White Students in Elementary School, Across a 16-Year Time Period**



Math. For the 16-year time period, the trend concerning the differences in passing rates in math between Hispanic students and White students in elementary school revealed a continuous achievement gap. Specifically, a trend with differences between Hispanic and White students was present for all 16 years of data analyzed. Average differences between White students were 1.50% to 13.61% higher than Hispanic students for math. The differences in passing rates in math between Hispanic students and White students were evident in the initial 1993-1994, 1994-1995, 2003-2004, and 2004-2005 testing years. During the 1993-1995 school years within the state of Texas, differences may be explained with the transition of TAAS testing from the fall to the spring, as well as the implementation of the TAAS tests for students in grades 4 through grades 8, and a new accountability measure for districts and campuses alike (http://ritter.tea.state.tx.us/student.assessment/resources/studies/testingtimeline.pdf).

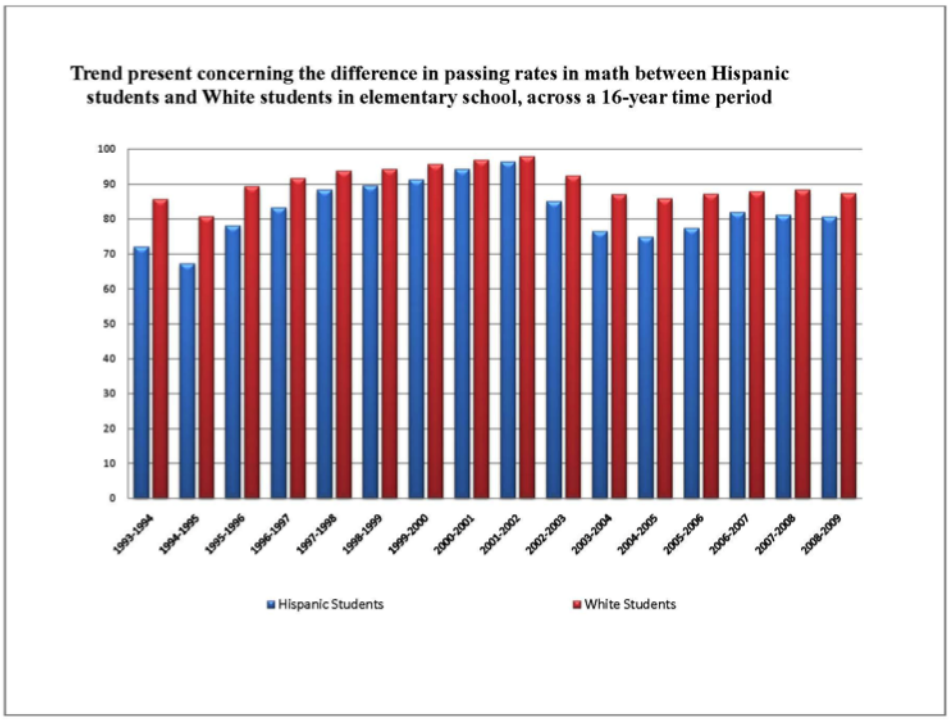
Effect Sizes in Math Over a 16-Year Time Period

Years	*M* Difference	*d*	Effect Size Range
2008-2009	6.73	0.61	Moderate
2007-2008	7.23	0.71	Moderate
2006-2007	5.88	0.60	Moderate
2005-2006	9.80	0.85	Large
2004-2005	11.01	0.92	Large
2003-2004	10.68	0.92	Large
2002-2003	7.31	0.68	Moderate
2001-2002	1.50	0.30	Small
2000-2001	2.63	0.40	Moderate
1999-2000	4.35	0.55	Moderate
1998-1999	4.68	0.53	Moderate
1997-1998	5.42	0.56	Moderate
1996-1997	8.44	0.71	Moderate
1995-1996	12.11	0.85	Large
1994-1995	13.54	0.85	Large
1993-1994	17.63	1.00	Large

Table 2.10

Differences in passing rates between Hispanic students and White students were also discernible during the 2003-2004 and 2003-2004 school years, which coincided with the signing of the No Child Left Behind Act. As mentioned previously, this law was enacted to bring stricter accountability for school campuses and districts, as well as 100% passing rates for all students by the 2013-2014 school year. The greatest differences in achievement between Hispanic students and White students (10.68% and 11.01%) were evident during the 2003-2005 school years. This large discrepancy in passing rate between students corresponds with the administration of the Texas Assessment of Knowledge and Skills test (http://ritter.tea.state.tx.us/student.assessment/resources/studies/testingtimeline.pdf). By the 2005-2006 school year, the mean difference between both groups began to decline and continued to decline through the 2008-2009 school year. The narrowest gap occurred during the 2001-2002 school year (1.50%). This decline was evident the year before the enactment of the No Child Left Behind Act. Readers are referred to Figure 2 for the trend that was present concerning the difference in passing rates in math between Hispanic students and White students in elementary school, across a 16-year time period.

Figure 2. **Trend Present Concerning the Difference in Passing Rates in Math Between Hispanic Students and White Students in Elementary School, Across a 16-Year Time Period**



2.6 Discussion

In this study, we investigated the passing rates in reading and in math over the past 16 years of Texas statewide data for White students and for Hispanic students on state-mandated assessment measures. Concerning the first research question for 16 academic school years (1993-2009) for Hispanic students and White students in reading, statistically significant differences were yielded for all years of data. From the 1993-2009 school years, the average passing rate of White students was 10.5% higher than the average passing rate of Hispanic students. Effect sizes for the 16-year time period ranged from moderate (0.58- 0.79) to large (0.84-1.41). For Hispanic and White students in reading, a large effect size extended across a 11-year time period and a moderate effect size continued across a 5-year time period.

Additionally, for the second research question for 16 academic school years for Hispanic students and White students in math, statistically significant differences were yielded for all years of data. Across the 16-year time period, the average passing rate in math for White students was 90.20% whereas, for Hispanic students, the average passing rate was 82.44% in math. For the 1993-2009 data analyzed, White students outperformed Hispanic students by an average of 7.76% in math. The effect size range for the 16-year time period ranged from small (0.30- 0.40), moderate (0.53-0.71), and large (0.85-0.92). For Hispanic and White students in math, a large effect size extended across a 6-year time period, a moderate effect size continued across an 8-year time period, and a small effect size extended for a 2-year time period.

For the 16-year time period, the trend concerning the differences in passing rates in reading between Hispanic students and White students in elementary school revealed an uninterrupted achievement gap. The passing rates in reading for White students averaged 6.73% to 30.87% higher than the average passing rates for Hispanic students across the 16-year time period. Differences in passing rates in reading between Hispanic students and White students were evident in the initial 1993-1994, 2002-2003, 2004-2005 testing years.

Pertaining to the 16-year time period, in math, the trend concerning the differences in passing rates between Hispanic students and White students revealed a continuous achievement gap. More accurately, a

trend with differences between Hispanic and White students was present for all 16 years of data analyzed. Average differences between White students were 1.50% to 13.61% higher than Hispanic students for math, over the 16-year time period. Differences in passing rates in math between Hispanic students and White students were evident in the initial 1993-1994, 1994-1995, 2003-2004, and 2004-2005 testing years.

Equity in academic achievement for all students, regardless of ethnicity, is an issue that has captured the attention of politicians, educators, and the federal government (Yell & Drasgow, 2005). The exigency to create equal educational opportunities for all students was actualized during the civil rights movements and the implementation of the Elementary and Secondary Educational Act during the 1960s (Yell & Drasgow, 2005). Equity in education reached a pivotal point when the No Child Left Behind Act of 2001 was enacted, in an effort to create equality for all students through "...stronger accountability for results, more freedom for states and communities, proven education methods, and more choices for parents" (U.S. Department of Education, http://www.ed.gov/nclb/overview/intro/4pillars.html). Provisions of the NCLB Act went into effect the following July, 2003. The foundation of the NCLB Act stemmed from the certainty that an increased role of the federal government in education would develop impartiality for all students (Yell & Drasgow, 2005).

Disparities in academic achievement have been a problematic issue among students of different ethnic groups (Alexander, Entwisle, & Olson, 2007; Borba, 2009; Borman & Kimball, 2005; Boyd-Zaharias & Pate-Bain, 2008; Butler & Stevens, 2001; Wallitt, 2008; Zhang & Cowen, 2009). Since the implementation of the NCLB Act, the effectiveness of the law narrowing the achievement gap has been contradictory (Ceci, Papierno, & Mueller-Johnson, 2002; Johnston, 1997). Proponents of the NCLB Act maintain that Black and Hispanic students in fourth grade showed "higher average reading scores in comparison to 2005 and 1992" (National Center for Education Statistics, 2007, http://nces.ed.gov/nationsreportcard/pdf/main2007/2007496_2.pdf). Although Black students (203 points) and Hispanic students (205 points) narrowed the achievement gap by 11 and 16 points, White students (231 points) still maintained a average 27 point advantage in reading for 2007 (National Center for Education Statistics, 2007, http://nces.ed.gov/nationsreportcard/pdf/main2007/2007496_2.pdf). The National Center for Education Statistics (2007) reported fourth grade students with LEP, averaged 188 points in Reading (Nations Report Card, http://nces.ed.gov/nationsreportcard/naepdata/).

Planty et al. (2009) indicated that nationally, fourth grade Hispanic students and Black students increased their mathematic scores in 2007, although a statistically significant difference was not present between Black students and White students in the 2005 and 2007 school year. Similarly, the White and Hispanic achievement gap increased in the 1990's, but stabilized and did not narrow during the 2007 school year (Planty et al., 2009). (Grade 4 National Results, http://nationsreportcard.gov/math_2009/gr4_national.asp?subtab_id=Tab_7&tab_id=tab1#chart).

In each case and congruent with the extant literature, White students had statistically significant higher passing rates in both reading and in math than did Hispanic students. The gap between the passing rates for these two groups of students remained consistent across all 16 years of statewide data. As such, we believe that this lack of equity needs to be addressed.

To date, we contend that efforts such as the ESEA and the NCLB Act have not resulted in substantial improvements in the schooling lives of minority children. In our study, we have provided extensive documentation that the schooling lives of Hispanic children are not better as a result of the ESEA and the NCLB Act. An argument could be made that legislation such as the ESEA and the NCLB Act are good for appearance sake, but have no real substance. As such, the lack of equity is permitted to continue, if not, encouraged to continue. Accordingly, we contend that the previous segregation that occurred in school still exists, though now disguised. Prior to ESEA and the NCLB Act, members of minority groups demonstrated statistically significantly lower academic achievement scores than did White students. Years later, in fact decades later, the same achievement gap exists between members of minority groups and White students. The question that should be asked is, "Why do we continue to have a schooling system that continues the same old instructional practices in which minority group persons achieve at a poorer level than White students?" An answer to this question could be that these practices are deliberate and intentional.

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Chapter 3

Reading and Math Differences Between Hispanic Students and Students Who Are Limited English Proficient: A Lack of Equity[1]

NCPEA Publications

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[1] This content is available online at <http://cnx.org/content/m42275/1.1/>.
[2] http://www.ncpeapublications.org

3.1 Sumario en espanol

En este estudio, nosotros revisamos las tasas pasajeras en leer y en matemáticas en el examen estado-puesto bajo el mandato en Tejas durante los últimos 7 años para estudiantes y estudiantes hispanos con una etiqueta de programación de inglés Limitado Capaz (LEP). En cada caso, entrando las tasas leer y en matemáticas fueron estadísticamente apreciablemente más alto para estudiantes hispanos que para estudiantes con una etiqueta de LEP. Los vacíos del logro en leer y en matemáticas entre estos dos grupos de estudiante disminuyó sólo mínimamente sobre este período de 7 años, como tamaño de efecto fueron, con dos excepciones, grande. Las implicaciones de nuestras conclusiones son discutidas.

NOTE: Esta es una traducción por computadora de la página web original. Se suministra como información general y no debe considerarse completa ni exacta

3.2 Introduction

Researchers (e.g., Allington & McGill-Franzen, 2003) have established that students who are limited in language proficiency have greater difficulty in reading achievement than students who are not Limited English Proficient (LEP). Ready and Tindall (2006) analyzed data from the Early Childhood Longitudinal Study, Kindergarten cohort of 1998-1999 (ECLS-K) to determine language status and children's acquisition of information within a school setting. Students were separated into groups according to the following language criteria: non-language minority, language minority proficient, language minority, non-proficient Asian language minority proficient, and other language minority proficient (e.g., White, Black, Native American, and multi-racial) children whose first language was not English. Hispanic language minority proficient students entered kindergarten with an academic disadvantage, with a *SD* of 0.43 in comparison to non-language minority students and a disadvantage of 0.59 *SD* in math. Although Hispanic language minority proficient students narrowed the gap in first grade (0.31 *SD*), the achievement gap remained. In math the achievement gap narrowed (0.37 *SD*) during kindergarten, but stabilized in first grade (0.41 *SD*). Ready and Tindall (2006) also examined socio-demographic background in relation to achievement. They concluded that Hispanic language minority proficient and language minority non-proficient students were the most economically disadvantaged of all kindergarten students. Language minority proficient students from Hispanic homes were nearly three times more likely to come from impoverished homes and five times more likely than native speakers to come from low socio-economic homes than other language minority proficient students.

The implementation of the Elementary and Secondary Act and the No Child Left Behind Act has created an atmosphere of anxiety, as standardized tests have been used to document a growing disparity among Whites and minority groups (e.g., African-American, Hispanic) (Adams & Singh, 1998; Cooper, 1989; Hedges & Nowell, 1999; Lee, 2002; Lee & Wong, 2004). The No Child Left Behind Act requires greater accountability from all subgroups, yet researchers (e.g., Kim & Sunderman, 2005; Pong, Dronkers, & Hampden-Thompson, 2003; Schoen, Cebulla, Finn, & Cos, 2003; Wayne & Young, 2003) have reported that discrepancies continue to be present in achievement associated with minority groups due to underperforming teachers, socio-economic status (SES), family dynamics, and student motivation. These discrepancies create an achievement gap that inevitably results in many minority students dropping out of high school and becoming a burden on society, through incarceration, unemployment, drug abuse, and adolescent pregnancies (Dempsey, 2005; Dillard & Pol, 1982; Petit & Western, 2004; Roosa, 1986). It is estimated that taxpayers pay $243,000 to $388,000 per student who drops out of high school (Cohen, 1998).

Previously, researchers (e.g., Adams & Singh, 1998; Cooper, 1989; Hedges & Nowell, 1999; Lee, 2002; Lee & Wong, 2004) have focused on academic achievement and its impact on students of African-American and Hispanic descent within a limited time frame. Limited empirical research studies are available in which differences in academic achievement among students of different ethnic groups have been investigated, particularly over long periods of time (Baker, Keller-Wolf, & Wolf-Wendel, 2000; Causey-Bush, 2005; Chatterji, 2006; Dekkers, Bosker, & Driessen, 2000; Manzo, 2006; Rojas-LeBouef & Slate, 2011a).

3.3 Purpose of the Study

The purpose of this study was to examine differences in academic achievement among students who are Hispanic or designated as being Limited English Proficient (LEP), using archival data from the Texas Education Agency's (TEA) Academic Excellence Indicator System (AEIS). Data examined were fifth grade reading and math test scores from the most recent 7 years of statewide data (i.e., 2008-2009, 2007-2008, 2006-2007, 2005-2006, 2004-2005, 2003-2004, 2002-2003). An examination of the Texas Assessment of Knowledge and Skills (TAKS) Reading and Math tests across 7 years may assist in analyzing the extent to which an achievement gap was present and the extent to which this gap had changed for students who are Hispanic or designated as being Limited English Proficient.

3.4 Research Questions

The following research questions were addressed in this study: (a) What is the difference in passing rates in reading between Hispanic students and students who are designated as being Limited English Proficient?; (b) What is the difference in passing rates in math between Hispanic students and students who are designated as being Limited English Proficient?; (c) What trends, if any, are present in the achievement gap in reading passing rates between Hispanic students and students who are designated as being Limited English Proficient?; and (d) What trends, if any, are present in the achievement gap in math passing rates between Hispanic students and students who are designated as being Limited English Proficient? The first two research questions were repeated for each year of available data.

3.5 Method

3.5.1 Participants

Participants for this study were selected from the Texas Education Agency Academic Excellence Indicator System which collects and stores data pertaining to the TAKS standardized examinations. Participants were chosen for this study based on their ethnicity (i.e., Hispanic), programmatic label (i.e., students labeled as Limited English Proficient), and involvement in the fifth grade Reading and Math TAKS examination scores from the most recent seven school years. Fifth grade was selected because students are required to complete the TAKS, when it was administered in the spring of each year.

The term, Limited English Proficient (LEP), is defined by the Texas Education Agency as:

Students identified as limited English proficient by the Language Proficiency Assessment Committee (LPAC) according to criteria established in the Texas Administrative Code. Not all pupils identified as LEP receive bilingual or English as a second language instruction, although most do. (http://ritter.tea.state.tx.us/perfreport/aeis/2008/glossary.htmlhttp://ritter.tea.state.tx.us/perfreport/aeis/2008/glossary.h

All students whose scores in reading and math were utilized for the schools' passing rates were either Hispanic or designated as LEP by the Texas Education Agency.

The number of schools in the State of Texas that reported passing rates in reading and in math of Hispanic students and of students with LEP varied by school year. Texas does not permit the release of information that might allow students to be identified. Thus, in cases where all Hispanic students at a school obtained a passing score in reading or in math, their data would not be publically available. Similarly, when small numbers of either Hispanic students or students with LEP are present at a school, their data would also not be made publically available. Sample sizes of schools are present in Tables 1 through 6. In every case, however, the sample size for each statistical analysis was over 1,000 schools.

3.5.2 Instrumentation

Archival data collected through the Academic Excellence Indicator System across a 7 year time period (i.e., 2002-2009) were used to determine the extent to which an achievement gap existed between His-

panic students and students with LEP. The Academic Excellence Indicator System, a composite of information pertaining to all Texas school students, was first compiled in 1984 in response to the achievement gap between White students and non-White students and accountability within schools and districts across Texas (Academic Excellence Indicator System, http://ritter.tea.state.tx.us/perfreport/aeis/about.aeis.html). Each year, annual reports are added to the AEIS website and the performance of students are reported in the following areas: results of the TAAS and the TAKS tests; passing rates of students; attendance rates; progress prior year TAKS failures; Exit-level TAKS cumulative passing rates; annual drop out rates; completion rates; and college readiness indicators (Academic Excellence Indicator System, http://ritter.tea.state.tx.us/perfreport/aeis/about.aeis.html[3]). With the objective of this research study being to examine differences in academic achievement between Hispanic students and students who were Limited English Proficient, data downloaded were the passing rates on the TAKS Reading and Math exams by ethnic membership and programmatic enrollment.

According to the Texas Education Agency, the Texas Assessment of Knowledge and Skills (TAKS) passing standard for reading and math in the fifth grade are as followed:

In reading, 40 is the total possible points given to a student to receive 100% passing rate and 28 points for students to receive 70% passing rate; and in writing, 32 is the total possible point that are given to a student to receive 100% passing rate and 18 points for students to receive 56% passing rate (http://ritter.tea.state.tx.us/perfreport/aeis/2008/glossary.html#appendf).

3.6 Results

After checking the assumptions for normality for students' TAKS reading scores and their math scores, it was determined that the datasets for all 7 years of data demonstrated evidence of non-normality. That is, the standardized skewness coefficients (i.e., the skewness value divided by its standard error) and the standardized kurtosis coefficients (i.e., the kurtosis value divided by its standard error) were almost all outside of the boundaries of +/- 3 (Onwuegbuzie & Daniel, 2002). Accordingly, nonparametric procedures were utilized to answer the research questions delineated above.

3.6.1 Yearly Differences

In regard to the 2008-2009 academic year, the Wilcoxon signed-rank test revealed the presence of statistically significant differences in passing rates in reading between Hispanic students and students who were LEP, z = -35.17, $p < .001$, and in passing rates in math, z = -30.11, $p < .001$. Effect sizes were large, with a Cohen's d of 1.25 for the reading pass rate difference, and moderate, with a Cohen's d of 0.78 for the math pass rate difference (Cohen, 1988). An analysis of the descriptive statistics table reveals that Hispanic students averaged 19.29% points higher in their reading pass rates and 10.96% points higher in their math pass rates than students who were labeled LEP. Readers are referred to Tables 1 through 4 for the descriptive statistics for these analyses.

Descriptive Statistics for Passing Rates in Reading and in Math for Hispanic Students and

[3] http://ritter.tea.state.tx.us/perfreport/aeis/about.aeis.html

Students Who Were LEP for the 2008-2009 and 2007-2008 School Years

2008-2009 School Year	n	M	SD
Reading Pass Rates			
Hispanic Students	1772	76.84	10.88
Students with LEP	1772	57.55	18.98
Math Pass Rates			
Hispanic Students	1666	80.63	11.45
Students with LEP	1666	69.67	17.68
2007-2008 School Year			
Reading Pass Rates			
Hispanic Students	1632	77.50	10.69
Students with LEP	1632	58.31	18.77
Math Pass Rates			
Hispanic Students	1583	80.86	10.37
Students with LEP	1583	68.98	16.97

Table 3.1

For the 2007-2008 academic year, the Wilcoxon signed-rank test revealed the presence of statistically significant differences in passing rates in reading between Hispanic students and students who were LEP, z = -33.62, $p < .001$, and in passing rates in math, z = -30.24, $p < .001$. Effect sizes were large, with a Cohen's d of 1.26 for the reading pass rate difference and a Cohen's d of 0.84 for the math pass rate difference (Cohen, 1988). Hispanic students averaged 19.19% points higher in their reading pass rates and almost 12% points higher in their math pass rates than students who were labeled LEP.

Concerning the 2006-2007 academic year, the Wilcoxon signed-rank test yielded statistically significant differences in passing rates in reading between Hispanic students and students who were LEP, z = -32.87, $p < .001$, and in passing rates in math, z = -29.20, $p < .001$. Effect sizes were large, with a Cohen's d of 1.36 for the reading pass rate difference and a Cohen's d of 0.87 for the math pass rate difference (Cohen, 1988). Hispanic students averaged 21.88% points higher in their reading pass rates and 13.3% points higher in their math pass rates than students who were labeled LEP.

Regarding the 2005-2006 academic year, the Wilcoxon signed-rank test resulted in statistically significant differences in passing rates in reading between Hispanic students and students who were LEP, z = -31.99, $p < .001$, and in passing rates in math, z = -29.19, $p < .001$. Effect sizes were large, with a Cohen's d of 1.41 for the reading pass rate difference and a Cohen's d of 0.91 for the math pass rate difference (Cohen, 1988). Hispanic students averaged 22.94% points higher in their reading pass rates and 14.22% points higher in their math pass rates than students who were labeled LEP.

Descriptive Statistics for Passing Rates in Reading and in Math for Hispanic Students and

Students Who Were LEP for the 2006-2007 and 2005-2006 School Years

2006-2007 School Year	n	M	SD
Reading Pass Rates			
Hispanic Students	1530	73.35	11.33
Students with LEP	1530	51.47	19.70
Math Pass Rates			
Hispanic Students	1498	79.48	11.02
Students with LEP	1498	66.18	18.72
2005-2006 School Year			
Reading Pass Rates			
Hispanic Students	1447	70.55	11.98
Students with LEP	1447	47.61	19.60
Math Pass Rates			
Hispanic Students	1445	74.92	11.86
Students with LEP	1445	60.70	18.64

Table 3.2

For the 2004-2005 academic year, the Wilcoxon signed-rank test revealed the presence of statistically significant differences in passing rates in reading between Hispanic students and students who were LEP, z = -29.53, $p < .001$, and in passing rates in math, z = -27.22, $p < .001$. Effect sizes were large, with a Cohen's d of 1.51 for the reading pass rate difference and a Cohen's d of 0.89 for the math pass rate difference (Cohen, 1988). Hispanic students averaged 24.56% points higher in their reading pass rates and 14.89% points higher in their math pass rates than students who were labeled LEP.

Concerning the 2003-2004 academic year, the Wilcoxon signed-rank test yielded statistically significant differences in passing rates in reading between Hispanic students and students who were LEP, z = -30.70, $p < .001$, and in passing rates in math, z = -28.76, $p < .001$. Effect sizes were large, with a Cohen's d of 1.51 for the reading pass rate difference and a Cohen's d of 0.93 for the math pass rate difference (Cohen, 1988). Hispanic students averaged 24.88% points higher in their reading pass rates and 16.15% points higher in their math pass rates than students who were labeled LEP.

Descriptive Statistics for Passing Rates in Reading and in Math for Hispanic Students and

Students Who Were LEP for the 2004-2005 and 2003-2004 School Years

2004-2005 School Year	n	M	SD
Reading Pass Rates			
Hispanic Students	1237	62.99	12.62
Students with LEP	1237	38.43	19.27
Math Pass Rates			
Hispanic Students	1298	72.73	12.77
Students with LEP	1298	57.84	19.85
2003-2004 School Year			
Reading Pass Rates			
Hispanic Students	1312	67.23	12.62
Students with LEP	1312	42.35	19.66
Math Pass Rates			
Hispanic Students	1346	74.22	13.26
Students with LEP	1346	58.07	20.72

Table 3.3

Regarding the 2002-2003 academic year, the Wilcoxon signed-rank test resulted in statistically significant differences in passing rates in reading between Hispanic students and students who were LEP, z = -28.09, $p < .001$, and in passing rates in math, z = -24.15, $p < .001$. Effect sizes were large for reading, with a Cohen's d of 1.21 for the reading pass rate difference, and moderate, with a Cohen's d of 0.72 for the math pass rate difference (Cohen, 1988). Hispanic students averaged 22.24% points higher in their reading pass rates and 12.70% points higher in their math pass rates than students who were labeled LEP.

Descriptive Statistics for Passing Rates in Reading and in Math for Hispanic Students and Students Who Were LEP for the 2002-2003 School Year

2002-2003 School Year	n	M	SD
Reading Pass Rates			
Hispanic Students	1180	70.87	12.79
Students with LEP	1180	48.63	22.51
Math Pass Rates			
Hispanic Students	1229	81.03	12.28
Students with LEP	1229	68.33	21.70

Table 3.4

3.6.2 Trends

For the 7-year time period, the trend concerning the differences in passing rates in reading between Hispanic students and students who were LEP in elementary school revealed a continuous achievement gap.

Hispanic students' passing rates in reading averaged 19.19% to 24.94% higher than the reading passing rates of students who were LEP for reading, over the 7-year time period. The differences in passing rates in reading between Hispanic students and students who were LEP were evident throughout the 7-year testing period (http://ritter.tea.state.tx.us/student.assessment/resources/studies/testingtimeline.pdf). Readers are referred to Table 5 for the mean differences, effect sizes, and effect size ranges across the 7 years of data analyzed.

Mean Differences, Effect Sizes, and Effect Size Ranges in Reading and in Math Over a Seven-Year Time Period

Differences	*M* Difference	d	Effect Size Range
Reading Pass Rates			
2008-2009	19.29%	1.25	Large
2007-2008	19.19%	1.26	Large
2006-2007	21.88%	1.36	Large
2005-2006	22.94%	1.51	Large
2004-2005	24.56%	1.41	Large
2003-2004	24.88%	1.51	Large
2002-2003	22.24%	1.21	Large
Math Pass Rates			
2008-2009	10.96%	0.78	Moderate/Near-Large
2007-2008	11.88%	0.84	Large
2006-2007	13.30%	0.87	Large
2005-2006	14.22%	0.89	Large
2004-2005	14.89%	0.91	Large
2003-2004	16.15%	0.93	Large
2002-2003	12.70%	0.72	Moderate

Table 3.5

Differences in passing rates between Hispanic students and students who were LEP were discernible during the 2002-2003 school year, which coincided with the signing of the No Child Left Behind Act (http://ritter.tea.state.tx.us/student.assessment/resources/studies/testingtimeline.pdf). As previously mentioned, this law was enacted to bring stricter accountability for school campuses and districts, as well as 100% passing rates for all students by the 2013-2014 school year. The greatest difference in achievement between Hispanic students and students who were LEP was evident during the 2003-2006 school years. The wide discrepancy in passing rate between students corresponded with the administration of the Texas Assessment of Knowledge and Skills test (http://ritter.tea.state.tx.us/student.assessment/resources/studies/testingtimeline.pdf). By the 2007-2008 school year, the mean difference between both groups began to decline and continued to decline the following school year. The narrowest gap occurred during the 2007-2008 school year (19.19%). All 7 years had a large effect sizes (Cohen, 1988). Readers are referred to Figure 1 for the trend that was present concerning the difference in passing rates in reading between Hispanic students and students who were LEP in elementary school, across a 7-year time period.

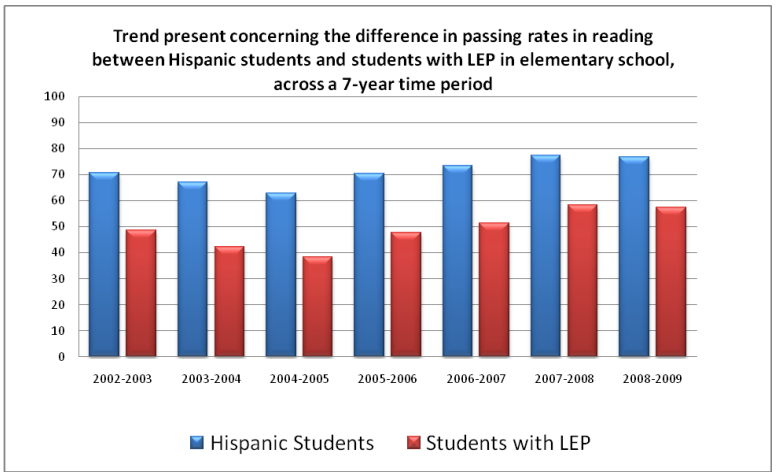

Figure 3.1

For the 7-year time period, the trend concerning the difference in passing rates in math between Hispanic students and students who were LEP in elementary school revealed a continuous achievement gap. Specifically, a trend with differences between Hispanic students and students who were LEP was present across the 7-years of data analyzed. Average differences between Hispanic students were 10.96% to 24.56% higher than students who were LEP for math, over the 7-year time period. Differences in passing rates in math between Hispanic students and students who were LEP were evident throughout the 7-year testing period (http://ritter.tea.state.tx.us/student.assessment/resources/studies/testingtimeline.pdf).

Differences in passing rates between Hispanic students and students who were LEP were discernible during the 2004-2005 school year, which coincided with the accountability measures of the No Child Left Behind Act (http://ritter.tea.state.tx.us/student.assessment/resources/studies/testingtimeline.pdf). As previously mentioned, this law was enacted to bring stricter accountability for school campuses and districts, as well as 100% passing rates for all students by the 2013-2014 school year. The greatest difference in achievement between Hispanic students and students who were LEP was most evident during the 2004-2005 school years. This wide discrepancy in passing rate between students corresponds with the first two years of administration of the Texas Assessment of Knowledge and Skills test (http://ritter.tea.state.tx.us/student.assessment/resources/studies/testingtimeline.pdf). By the 2006-2007 school year, the mean difference between both groups began to decline and continued to decline the following school years. The narrowest gap was evident during the 2008-2009 school year (10.96%). All 7 years had moderate to large effect sizes (Cohen, 1988). Readers are referred to Figure 2 for the trend that was present concerning the difference in passing rates in reading between Hispanic students and students who were LEP, across a 7-year time period.

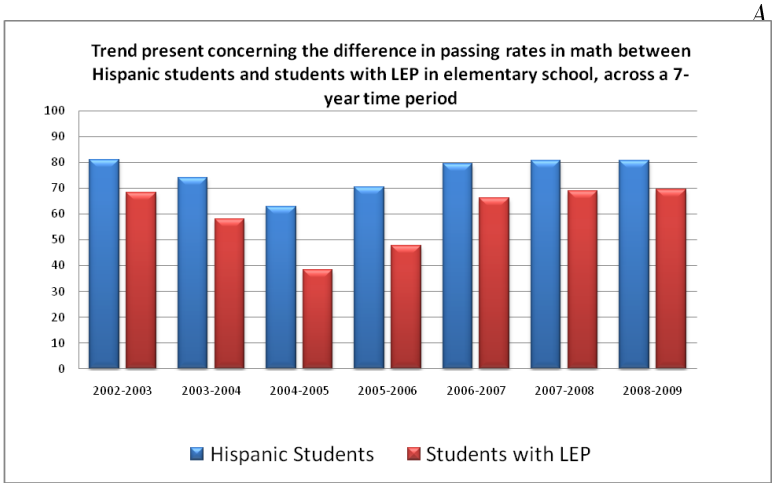

Figure 3.2

3.7 Discussion

In this study, we examined the passing rates in reading and the passing rates in math of Hispanic students and of students designated as Limited English Proficient on a state-mandated assessment measure for the last 7 years of available data. Statistically significant differences were yielded in reading for all years of data. Across the 7-year time period, the average passing rate in reading for Hispanic students was 71.33% whereas, for students who were LEP, the average passing rate was 49.19%. For the 2003-2009 data analyzed, Hispanic students outperformed students who were LEP by an average of 22.14% in reading. The effect size range for the 7-year time period was large (1.21- 1.51).

Examining the presence of trends in reading between Hispanic students and students who were Limited English Proficient, across a 7-year time period were examined, an achievement gap was clearly present. For each year analyzed, Hispanic students surpassed students with LEP in reading. Passing rates for in reading for Hispanic students averaged 19.19% to 24.94% higher than for students who were LEP. Distinctions in the effect size may coincide with the implementation of the NCLB Act which increased federal funding for school districts and public schools, but also increased accountability and high academic standards, as well as requiring all students with LEP to become proficient in English (Yell & Drasgow, 2005). The wide discrepancy in passing rate between students also appears to correspond with the change in administration from the Texas Assessment of Academic Skills measure to the Texas Assessment of Knowledge and Skills test (http://ritter.tea.state.tx.us/student.assessment/resources/studies/testingtimeline.pdf).

Regarding the research question concerning math for the 7 academic school years (2002-2009) for Hispanic students and students who were LEP, statistically significant differences were yielded for all years of data. Across the 7-year time period, the average passing rate in math for Hispanic students was 73.98% whereas for students who were LEP, the average passing rate was 59.61%. Hispanic students outperformed students who were LEP by an average of 14.61% in math. The effect size range for the 7-year time period was moderate (0.72-0.74) to large (0.84- 1.41). For Hispanic and students who were LEP, a large effect size in math extended across a 5-year time period (i.e., 2003-2004, 2004-2005, 2005-2006, 2006-2007, and 2007-2008) and a moderate effect size continued across a 2-year time period (i.e., 2002-2003 and 2008-2009). For the 7-year time period, the trend concerning the difference in passing rates in math between Hispanic students and students who were LEP in elementary school revealed a continuous achievement gap. Average differences in math between Hispanic students were 10.96% to 24.56% higher than for students who were LEP, over the 7-year time period.

In each case, students with a programmatic label of Limited English Proficient had statistically significantly lower passing rates in both reading and in math than Hispanic students. The gap between the passing rates for these two groups of students remained consistent across the 7 years of data. Accordingly, in our opinion, cause for concern exists. Clearly, as evidenced by the consistent and strong findings in this study, a lack of equity is still present and needs to be addressed.

Academic achievement in relation to ethnic minorities and students in bilingual and English as a Second Language classes has received growing interest from researchers and federal policy makers (Celeste & Stokes-Brown, 2009; Kim & Sunderman, 2005; Lee, 2002; Lee & Wong, 2004; Powers, 2004; Ravitch, 2009; Rothstein & Jacobsen, 2009; Schiller & Muller, 2003). The enactment of the No Child Left Behind Law fueled assumptions among politicians and lobby makers that the federal government can "improve our nations schools" (No Child Left Behind: A Desktop Reference, 2002, p. 9). The No Child Left Behind Act was encompassed by four fundamental principles: greater accountability of states, districts, and school administration, flexible control to spend education money, enhanced parental choice, and teaching methods that are research based (No Child Left Behind: A Desktop Reference, 2002).

Since the implementation of NCLB, researchers have reported great difficulty in diminishing the achievement gap among minority students and minimal improvements have been observed by researchers (Fry, 2007; Rojas-LeBouef & Slate, 2011a, 2011b; Rossell, 2006). In our opinion, based upon our analyses of these statewide data, the No Child Left Behind law has allowed inequity among minority students to continue.

3.7.1 Recommendations

For the present research investigation, Hispanic students outperformed students with LEP in both reading and math standardized tests for 7 years. For every year analyzed, the achievement gap was present with a moderate to large effect size for Hispanic students and students with LEP. When results of this study are linked with the results of Rojas-LeBouef and Slate (2011b), a moderate to large achievement gap was documented between White students and Hispanic students over an extended period of time.

Though the gap remained constant between these groups of students, increases in TAKS Reading and Math scores were present. Increases in achievement on the TAKS tests can be elucidated by teachers and other school personnel (e.g., special education teachers, literacy specialists, literacy coaches, math coaches) who were teaching students to the test (Assaf, 2006; Diamond, 2007; McNeil, 2000; Smith, 1991; Valenzuela, 2000). In other words, school personnel were teaching students testing strategies; thus, students could be superficially increasing their test scores; and, thus, the achievement gap could unrealistically become narrower between White students and non-White students (Carnoy, Loeb, & Smith, 2001; Haladyna, Nolen, & Hass, 1991; Shepard, 1990).

A recommendation for best practice would be to re-norm or to change the state-mandated test on a regular basis (e.g., every 2-3 years). The practice of changing the test (such as the Scholastic Assessment Test or American College Testing) on a regular basis or re-norming would decrease the opportunities for school personnel to teach students the test and to keep schools from reporting artificially high test scores. Clearly, what is occurring in Texas schools, and in schools across the nation, is the appearance of a diminishing achievement gap. Yet the lessoning of the achievement gap is an illusion that is fueled by school personnel teaching to standardized tests (Donato & de Onis, 1994; Haney, 2006; Harrison, 2006; Linton & Kestor, 2003).

Linton and Kester (2003) examined the achievement gap between White and minority students in Texas, using TAAS and NAEP test results for 8th grade students. The researchers concluded that the test results were misleading due to the inflated scores that were being reported and the inevitable creation of a "possible glass ceiling effect" (p. 2). Linton and Kester (2003) contended that test scores were negatively skewed for both White students and non-White students. For this investigation and the Rojas-LeBouef and Slate (2011b), test results demonstrated the same increase and shift in passing rates for Hispanic students, students with LEP, and White students. As Hispanic students and students with LEP increased their passing rates, so did White students on the TAKS Reading and Math tests. Therefore, a shift of scores occurred, and the passing rates for Hispanic students, students with LEP, and White students became negatively skewed.

Haney (2006) concluded high stakes testing has created an atmosphere of "mania to make test scores average[s] appear to increase" (p. 12). He argued that Florida, Texas, New York, and Alabama had generated fraudulent scores to generate an illusion of accountability. Moreover, Haney (2006) contended that states and school districts were encouraging high school students to drop out of school to give the appearance of state compliancy to the NCLB Act.

Another recommendation is that state education agencies need to emphasize programs that work effectively instead of using programs that are simply recycled from one school district to another school district. According to Brady (2003), most interventions that are implemented under the NCLB Act are accountability systems that have already been applied by most school districts since the 1980s. Some suggestions for best practices are merely recycled teaching techniques that have been used by educators for years (Brady, 2003).

Finally, we suggest that a national panel of experts that be convened to address not only the current achievement gaps that have been present for decades and continue to be present today but more importantly to examine ways in which to rectify this situation. Clearly, school reform efforts to date that have been implemented have not been successful. We argue that such a national effort on reforming schools is essential for the continued economic success of the United States. Considering the rapid increase of Hispanics, not only in Texas but in the United States, not educating Hispanics and students with Limited English Proficiency will result in lower standards of living for all citizens. As the quote attributed to John F. Kennedy (Adler, 2003) in a speech that he gave in Pueblo, Colorado, on August 17, 1962 goes, "A rising tide lifts all boats", the American educational system needs radical change so that the tide of education can indeed lift all students' achievement levels. To do otherwise is absolutely unacceptable.

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