

NO CHILD LEFT BEHIND AND THE ACHIEVEMENT GAP:  
CONTRIBUTING FACTORS AND TRENDS IN STUDENT POPULATIONS

A Master's Research Paper Presented to  
The Faculty of the College of Education  
Ohio University

In Partial Fulfillment  
Of the Requirement for the Degree  
Master of Education

By  
Dustin Wood  
Winter 2007

## TABLE OF CONTENTS

Chapter One: Introduction.....	1
Background.....	1
Statement of Research Question.....	3
Research Questions.....	3
Purpose and Significance of the Study.....	3
Limitations.....	4
Definition of Terms.....	5
Methodology.....	5
Organization of the Study.....	6
Chapter Two: Review of the Literature.....	7
Examining NCLB.....	7
Goals of the No Child Left Behind Act.....	9
Contributing Factors.....	11
A Framework.....	12
Environmental Factors.....	12
School Factors.....	18
Summary.....	21
Chapter Three: Analysis of the Literature.....	22
No Child Left Behind and Closing the Achievement Gap.....	22
Proposed Strategies.....	26
Chapter Four: Summary, Conclusions, and Recommendations.....	32

Summary of the Study.....	32
Conclusions.....	33
Recommendations.....	34
References.....	38
Appendix A.....	43
NCES Trends in Average Mathematics Scale Scores: Black–White Gap....	xx
Appendix B.....	45
NCES Trends in Average Reading Scale Scores: White-Black Gap.....	xx
Appendix C.....	47
NCES Trends in Average Mathematics Scale Scores: White-Hispanic Gap	xx
Appendix D.....	49
NCES Trends in Average Reading Scale Scores: White-Hispanic Gap.....	xx

## CHAPTER ONE

### Introduction

#### *Background*

The achievement gap has regained significant attention since the passage of the No Child Left Behind Act (NCLB). With pressure to produce results, school officials are spending more time and resources on understanding and lessening the academic achievement gap between students. The issue has also gained national attention in recent years with an increase in the literature discussing whether or not the achievement gap between students is actually closing. According to Paul Barton (2005), a senior associate of the Policy Information Center of Educational Testing Service who has written extensively on the achievement gap, “in... comparing students in one grade with students in the same grade in prior years, NAEP (National Assessment of Educational Progress) has shown persistent gaps since its beginning more than three decades ago”. The achievement gap is a major concern for educators and it impacts students across the country every day.

However, the achievement gap is not a new phenomenon. The gaps have existed for years while only closing marginally as indicated by the National Center for Education Statistics (NCES) (2000):

The gaps were even larger from around 1970 to the mid-1980s, when there was a significant reduction in the gaps that has remained about the same since then, although some ground was lost in the 1990s.

Recent data released by NCES demonstrates that the gap has only closed marginally since the introduction of No Child Left Behind. To represent this marginal change, studies on the long-term trends of student performance in mathematics show that the 2004 gap between white students and black students at age 9 was 23 points compared to 25 points in 1986, at age 13 was 27 points compared to 24 points in 1986, and at age 18 was 28 points compared to 29 points in 1986 (NAEP, 2005). Similar results were found in comparisons between white and Hispanic students (NAEP, 2005). The results in reading echo the results in mathematics (NAEP, 2005), with only marginal improvement and oftentimes resulting in greater gaps in the recent No Child Left Behind era than in the 1980s. Understanding the factors that contribute to the academic achievement gap can assist educators in identifying effective and appropriate strategies to help close the gap. Political officials also might consider such factors when considering future educational policy initiatives or amendments to current initiatives such as the No Child Left Behind Act.

The challenges associated with closing the gap are enormous and have posed problems for political and school officials as well as educators on the front lines of this struggle. Barton (2005) suggests a number of factors that contribute to the academic achievement gap in schools including the rigor of the curriculum, the extent of teacher preparation in the subject matter being taught, the amount of a teacher's experience, class size, the availability of technology-assisted instruction, and safety in schools (p. 14). Educators can have a direct impact in many of these areas and it is important to have a well-developed, research-based understanding of the contributing factors in order to

make appropriate decisions about academic interventions, lesson development, and overall classroom management.

Contributing factors to the achievement gap are not limited to in-school but also involve factors that extend before and beyond school. Those factors include parent participation, hunger and nutrition, reading to young children, having two parents in the home, how often students changed schools, weight at birth, lead poisoning, reading to young children, and excessive television watching (Barton, 2003, 2004, 2005). This paper will identify several specific factors that contribute to the achievement gap in order to characterize and understand the issue and to help identify possible opportunities to improve the No Child Left Behind Act as it relates to closing the achievement gap.

#### *Statement of Problem*

Passage of NCLB has led to renewed attention to the academic achievement gap in schools, which it seeks to decrease. Findings in the recent literature suggest that NCLB has failed to accomplish this goal.

#### *Research Questions*

Based on the statement of the problem, this master's research project seeks to answer the following research questions:

1. What factors contribute to the academic achievement gap between students?
2. What strategies does the literature suggest will improve the No Child Left Behind Act with regard to closing the achievement gap?

#### *Purpose and Significance of Study*

The purpose of this study is to better understand the factors that contribute to the academic achievement gap as it relates to providing students with a quality education and

implementing strategies that have produced improved achievement and may therefore do so in the future. The significance of this paper is that it addresses a serious and relevant issue in education today. Through this review, educators and school officials may gain a better understanding of the factors contributing to the academic achievement gap between students as well as of strategies that have yielded improved achievement. Specifically, the information contained in this study can be useful to several constituencies, including educators, school administrators, students, and parents. Educators can better prepare classroom content and lesson planning to meet the needs of a diverse student population by utilizing research-based strategies. School officials can allocate supplemental funds for educators to take advantage of innovative new approaches to closing the achievement gap and monitor student achievement on state and federal standards. Students and parents can also be more involved and invested in the educational process by allowing them to monitor student progress and select various proven intervention strategies to enhance student achievement.

#### *Limitations*

Major limiting factors for this master's research project are:

1. The period of research examined is primarily focused on the research literature since 1997.
2. Most of the research has been conducted with a focus on primary and secondary education.
3. Research articles that offered anecdotal examples were included, not all articles were based on scientific research.

4. Articles found in various electronic search engines were only used if they were available on-line, available through the Interlibrary Loan (ILL), or at the main branch of the Alden library.

### *Definition of Terms*

The following definition was used in this study:

Achievement Gap: A persistent, pervasive, and significant disparity in educational achievement and attainment among groups of students as determined by a standardized measure (Kentucky Department of Education, 2007).

### *Methodology*

The methodology for this paper consisted of a literature review using the electronic resources provided through the Alden Library at Ohio University. The primary electronic database search through the Educational Resources Information Center Search Engine (ERIC) focused on the key words “achievement gap.” The ERIC database thesaurus combined the relevant terms “academic achievement,” “racial differences,” “minority group children,” “state standards,” “teacher competencies,” “equal education,” “urban schools,” “minority groups,” “accountability,” and “disadvantaged youth.” The search was then limited to articles that specifically addressed education between Kindergarten and 12<sup>th</sup> grade and those that were available in full text electronically, in print at Alden Library or through the Interlibrary Loan. Next, abstracts were reviewed to narrow down the literature and identify the most relevant selections for inclusion. Although research articles were the primary focus of the search, articles from other sources including newspapers or magazines, available online or in print in the Alden Library, and that reported specific findings and recent relevant data were also included.

### *Organization of the Study*

Chapter One of this study includes background information on the academic achievement gap between students. The main problem and research questions are also outlined. The limitations, definition of terms and methodology of the study are also included.

Chapter Two presents a review of literature conducted for the purpose of this study. Themes will be identified and supported by major findings.

Chapter Three includes a comprehensive summary of the research and a comparative analysis of the findings. Any limitations of the methodology will also be discussed.

Chapter Four summarizes the previous three chapters and offers conclusions and recommendations for further study.

## CHAPTER TWO

### A Review of the Literature

#### *Examining NCLB*

President George W. Bush signed the No Child Left Behind (NCLB) Act into law on January 8, 2002. The law was developed in an effort to close the academic achievement gap and increase accountability for schools to provide a quality education for *all* students. NCLB was based on four main principles: accountability, more local freedom, utilizing proven methods, and more choice for parents (U.S. Department of Education, 2004). Each of these principles contains a number of specific components that are important for understanding the legislation and its impact on the achievement gap.

Accountability is the most significant component of NCLB in terms of its impact on the achievement gap. State assessments are used to make sure that students are learning and that schools can be held accountable for student performance. These assessments are administered every year at every grade level between the 3<sup>rd</sup> and 8<sup>th</sup> grade and also at least once more in high school (U.S. Department of Education, 2006). These tests are then used to compare schools to one another and identify which schools are making Adequate Yearly Progress (AYP) (U.S. Department of Education, 2006).

Adequate Yearly Progress is the term used in NCLB to determine if a school has met the math and reading goals for a given year (U.S. Department of Education, 2005). If a school fails to meet these goals in any two-year period it is classified as a school in need of improvement (U.S. Department of Education, 2005). According to the U.S. Department of Education, when a school is designated as in need of improvement, it will receive additional help and children will have the option to transfer to another public or

charter school. Children in these districts also are also eligible to receive free tutoring and extra help with schoolwork. This program of additional tutoring and assistance with work is known as Supplemental Educational Services (SES). It is generally made available to children from low-income families and is provided after school or during the summer months (U.S. Department of Education, 2005).

The second concept of more local freedom has been highlighted by the Bush administration as a major strength of the NCLB Act. The idea behind this principle is that people at the local level have a better sense of the needs of their school than anyone at the state or federal level operating without the day-to-day involvement in the district. According to the U.S. Department of Education (2004):

It is possible for most schools to transfer up to 50 percent of the federal formula grants they receive under the Improving Teacher Quality State Grants, Educational Technology, Innovative Programs and the Safe and Drug Free Schools programs to any one of these programs, or to their Title I program, without separate approval.

Therefore, schools can use the funds to address specific needs of the district including recruiting better teachers, increasing salaries, and increasing professional development opportunities (U.S. Department of Education, 2004).

A third major principle of the NCLB legislation is the utilization of research-based, proven teaching practices and methods. Federal research dollars are allocated with the specific aim of discovering what practices are effective and then utilizing those to maximize the learning outcomes in the classroom and on the state's standards assessments. These methods are examined and then listed on the What Works

Clearinghouse (WWC), a site supported by the U.S. Department of Education for use by teachers nationwide. The What Works Clearinghouse is supported by the Technical Advisory Group (TAG) that helps to establish and validate the standards for reviewing research, informs the methodological aspects of the evidence reviews, and provides guidance to the WWC contractors. A Principal Investigator, a Project Coordinator, and research analysts conduct each review of evidence. These individuals determine what research is acceptable.

A fourth and final significant principle of NCLB is the notion of more parental choice in a child's education. Based on the law, parents have the right to have their child change schools if that child attends a school that has been identified as needing improvement under the AYP provisions of NCLB. Students are able to change to another public school, charter schools, or a private education that is not designated as needing improvement. Parents of children in these designated schools also are entitled to other free, government-funded programs like tutoring and after-school academic programs (U.S. Department of Education, 2007).

#### *Goal of the No Child Left Behind Act*

Based on the four major principles of NCLB, legislators have set the goal of having all children be proficient in language arts, math, and science. This goal has been developed into a 12-year plan that must be realized by the 2013-2014 academic year and has been adopted by organizations such as the National Education Association (NEA). According to the plan, every child in America will be "proficient" by June 2014 (NEA, 2006).

Proficiency, according to No Child Left Behind, involves ensuring that all students “are achieving at grade level or better in reading and mathematics by 2014” (U.S. Department of Education, 2006). One approach to realizing this goal is the adoption of high-quality growth models such as the growth-based accountability model. Many states have adopted growth models and have several minor differences. However, the basic principle of the growth-based accountability model is that schools are given credit for student improvement over time by tracking individual student achievement year to year (U.S. Department of Education, 2005). These models are important in examining how many schools are working to close the achievement gap.

In November 2005, the U.S. Department of Education (2006) outlined seven core principles that help to guide growth-based accountability models. Those seven principles include the following:

1. Ensure that all students are proficient by 2014, and set annual goals to ensure that the achievement gap is closing for all groups of students;
2. Set expectations for annual achievement based on meeting grade-level proficiency, not on student background or school characteristics;
3. Hold schools accountable for student achievement in reading/language arts and mathematics;
4. Ensure that all students in tested grades are included in the assessment and accountability system, hold schools and districts accountable for the performance of each student subgroup, and include all schools and districts;
5. Include assessments in each grade 3-8 and in high school for both reading/language arts and mathematics, and ensure that they have been

- operational for more than one year and receive approval through the NCLB peer review process for the 2005-06 school year. The assessment system must also produce comparable results from grade to grade and year to year;
6. Track student progress as part of the state data system; and
  7. Include student participation rates and student achievement on a separate academic indicator in the state accountability system.

Several of the principles revolve around district and state goal setting. The expectations are established based on meeting grade level proficiency and not on student background or school characteristics (U.S. Department of Education, 2006). The principles also include clauses that *all* students that are tested are included in the assessment and accountability systems. These measures indicate that student diversity is not the guiding influence in defining proficiency. The inclusion of all scores in the assessment and accountability systems also ensures that the scores of a particular group or minority are not excluded to improve district scores.

#### *Contributing Factors*

The academic achievement gap has been the subject of conversation among teachers and administrators for decades. The factors that contribute to the academic achievement gap have also been analyzed and discussed in recent years as more efforts have been made to close the gap. Understanding the factors that contribute to the achievement gap is important when analyzing the effectiveness of the No Child Left Behind Act and other measures. The need to close the achievement gap is as pressing a concern today as it has ever been. Gerry House, president and CEO of the Institute for Student Achievement, has extensively examined and written about the achievement gap.

House argues that between 25 to 30 percent of America's teenagers fail to graduate from high school with a regular diploma, a figure that climbs to more than 50 percent for black male and Hispanic students. Furthermore, studies have shown that the average 12<sup>th</sup>-grade African-American student is reading and doing math at about the level of the average eighth-grade white or Asian student (House, 2006).

### *A Framework*

Paul Barton has written extensively on fourteen specific factors that affect achievement including a policy information report for Educational Testing Service (2003). Barton reviewed hundreds of publications on the achievement gap to help identify the most common factors. This extensive review makes Barton's work a good framework for the major contributing factors to the achievement gap. Barton (2005) separates the contributing factors into factors that occur in school and others that occur before or beyond school. Each of these factors will be examined below in greater detail to illustrate not only the complexity of the achievement gap but also to identify the many factors that need to be considered when creating measures aimed at closing the gap.

### *Environmental Factors*

The environmental factors that contribute to the achievement gap are often outside of the school's sphere of influence. These factors include birth weight, lead poisoning, hunger and nutrition, reading to young children, television watching, parent availability, student mobility, and parent participation (Barton, 2004). Many of these are difficult for schools to address effectively. However, they are still important factors to consider when examining what perpetuates the academic achievement gap in schools and how effective measures such as NCLB can be addressed holistically.

*Low Birth Weight.* The first environmental factor that contributes to the achievement gap is low birth weight. Barton (2004) states that, “infants with low birth weights are at risk of impaired development, including delayed motor and social development” (p. 9). Students with low birth weights are more likely to fail or repeat grades due to the impaired development that often accompanies this condition. To illustrate its relevance to the achievement gap, in 2000, 13 percent of black infants were low in birth weight, compared with 7 percent of white infants and 6 percent of Hispanic infants (p. 9).

Almond, Chay, and Lee (2004) also discuss the importance of birth weight on cognition. They suggest there is “a correlation between low birth weight and high blood pressure, cerebral palsy, deafness, blindness, asthma and lung disease among children, as well as with reduced IQ, test scores, and cognitive development” (p. 1). Other research has supported low birth weight as a contributing factor and shown that infants with low birth weight tend to have lower educational attainment (Behrman, Rosenzweig, & Taubman 1994; Currie & Hyson 1999; Behrman & Rosenzweig 2001).

*Lead Poisoning.* Lead poisoning is another environmental factor that contributes to the achievement gap. Many children living in poor communities are exposed to lead paint that was commonly used in housing built before 1946. Recent data shows that the percentage of black children under age 6 living in these conditions was more than three times the percentage of white children and the percentage for Mexican American children was double the percentage for white children (p. 10). The U.S. General Accounting Office (1999) also noted that children from low-income children have blood lead levels at

nearly five times the rate of middle-class children. According to information from LeadPoison.net (n.d.):

At high levels, lead poisoning causes coma, convulsions and death. At low levels – levels far below those that present obvious symptoms – lead poisoning in childhood causes reductions in IQ and attention span, reading and learning disabilities, hyperactivity, impaired growth, behavioral problems, and hearing loss. These effects are long-term and may be irreversible (online).

It is clear from the U.S. General Accounting Office (1999) data that children from low-income communities have greater exposure to lead than students in more affluent areas. Therefore, these low-income students have a greater likelihood of suffering from any number of the aforementioned issues associated with exposure to lead.

*Malnutrition.* Hunger and malnutrition are also important contributing factors. Research has shown that hunger and malnutrition can harm a child's cognitive development (Barton, 2004). Regular surveys of hunger and food insecurity have shown that black and Hispanic children under age 18 are about three times as likely to be hungry and insecure about their food supply than their white counterparts (p. 10). The effects of malnutrition on a child's intellectual development are significant according to the following information from the World Bank Policy and Research Bulletin (1997):

Prolonged childhood malnutrition can impair mental development both directly (by compromising the structural development of the brain) and indirectly (by suppressing a child's motor activity and thus lessening environmental stimulation). The direct effect of malnutrition is believed to operate largely in the first two or three years of life (online).

This information highlights the impact of malnutrition on intellectual development. Students from low-income communities are more likely to be malnourished and, consequently, are more likely to have intellectual deficiencies due to the lack of proper nutrition.

*Reading to Young Children.* Factors in the home also play a major role in the achievement gap. Parental involvement can have a major impact on a student's academic performance. According to Barton (2004), children whose parents or caregivers read to them when they are young have a significant advantage in terms of language acquisition, achievement in reading comprehension, literacy development. This directly impacts the achievement gap because Black and Hispanic children are read to much less than white children and children in poverty are read to less than children from higher socioeconomic brackets.

The socioeconomic status and occupation of a child's parents may also impact vocabulary and literacy development. Rothstein (2004) found that, at 4 years of age, children of professionals had vocabularies that were nearly 50 percent larger than those of working-class children and twice as large as those of welfare children. Rothstein also noted a relationship between the occupation of the parents and the verbal encouragement of children. Toddlers of professional parents received an average of six encouragements per reprimand. Working-class children got two per reprimand. For welfare children, the ratio was reversed: they received an average of one encouragement for every two reprimands. Students from more affluent backgrounds received more positive reinforcement at home and, more often than their minority counterparts, support from two parents.

*Television.* Television is yet another important factor in student achievement. Recent studies have shown that the amount of television that students watch influences academic achievement. A study by Christakis (2004) established that each hour of television that a child watches on a daily basis between the ages of 1 and 3 years old increases by ten percent the risk that he or she will have attention problems. According to Barton (2004), forty-two percent of black 4<sup>th</sup> graders watch six or more hours of television per day – more than three times the percentages of white 4<sup>th</sup> graders who watch that much (p. 10).

Gentzkow and Shapiro (2006) have also examined the relationship between the amount of television viewing in children and student achievement. According to these authors, there now exists “a steady stream of academic research showing a negative association between television viewing and student achievement” (p. 1). Pediatricians also share the widespread belief that television is detrimental to cognitive development and academic achievement (Gentile et al, 2004).

*Parental Availability.* The level of television that a child watches can be, at least partly, attributed to parental availability. An increasingly common trend, families with a single parent present in the home can put a strain on the level of parental availability. Barton (2004) states that just 38 percent of black children lived with both parents in 2000 and nearly one in ten lived with neither parent (p. 10). In contrast, approximately 65 percent of Hispanic children and 75 percent of white children lived with both parents (p. 10). Rothstein (2004) found that family dynamics, whether single parent or dual parent homes and socioeconomic background have both positive and negative implications for child rearing habits, disciplinary philosophies, and ways of communicating expectations.

*Student Mobility.* Related to the issue of parental availability and single parent families is student mobility. Student mobility refers to students who, under whatever circumstances, have to switch schools frequently or mid-year. The rate of student mobility is directly related to whether they live in poverty or come from single parent homes (Metropolitan Housing Council, 2004). The most recent studies on student mobility were completed in 1991 and published in 1994 by the U.S. General Accounting Office. The data showed that 41 percent of frequent school changers were below grade level in reading and that 33 percent were below grade level in math. According to Rothstein (2004), “high mobility depresses achievement not only for the students who move – each move means readjusting to teachers, classmates, and curriculum – but also for other students in high-mobility schools” (p. 42). Teachers with ever changing classrooms are more likely to review old material than introduce new material, and are less able to adjust instruction to the individual needs of students they barely know (Rothstein, 2004).

*Parental Participation.* Inherent in many of the aforementioned factors is the notion that parent participation is critical. When examining parent participation in terms of the interactions between or involvement by the parents in the school, Child Trends Data Bank (2003) made several important observations related to the achievement gap. According to the Child Trends Data Bank, an organization that provides research and data to inform decision-making that affects children, “students with parents who are involved in their school tend to have fewer behavioral problems, better academic performance, and are more likely to complete secondary school” (p. 11). Furthermore, Child Trends Data Bank found that parents of black and Hispanic students and low-

income parents are much less likely than parents of white students to attend a school event, do volunteer work, or serve on school committees.

### *School Factors*

The remaining factors that influence student achievement are all related to school. These factors include the rigor of curriculum, teacher experience and attendance, teacher preparation, class size, technology-assisted instruction, and school safety (Barton, 2004). These factors are the most important elements for educators and administrators to examine because they present the most practical opportunity to close the achievement gap.

*Rigor of Curriculum.* The rigor of curriculum is the first school factor that contributes to the achievement gap. According to Barton (2004), “although all racial/ethnic groups are now taking harder courses than in the past, minorities still lag considerably behind, and they are underrepresented in Advanced Placement examinations” (p. 12). Despite the rise in the number of students taking Advanced Placement courses, there is still a disparity in the curriculum that many white students are taking in comparison to their black and Hispanic counterparts. The disparity continues with the access to “gifted and talented” programs. Only 6.9 percent of students of color compared to 23 percent of white students had access to such programs (Berlak, 2001, p. 9).

*Qualifications and Experience of Teachers.* The qualifications and experience of teachers is also an important factor in the achievement gap. According to Barton (2004), students in high-poverty and high-minority schools are much more likely to be taught by out-of-field teachers. Students in more affluent districts are being taught by highly

qualified teachers with advanced degrees and training while poorer districts struggle to recruit teachers with the appropriate training for a particular subject or placement. Even well-intentioned teachers who are hired by these districts are often ill prepared to offer the level of quality instruction and attention that is needed to begin to close the achievement gap. To further illustrate the disparity in experience and teacher preparation, minority and low-income students are more likely to be taught by teachers with three or fewer years of experience and to be in schools with higher teacher turnover (p. 12). In some schools in poor and urban communities, non-credentialed teachers make up half the faculty (Rodriguez, 2001). Furthermore, Quality Counts 2003 reported that the percentage of students in high-poverty schools taught by a teacher without at least a minor in the subject is nearly double that of students in low-poverty schools.

*Class Size.* According to Talbert-Johnson (2004), “shortages of qualified teachers translate into enlarged class sizes (p. 27)”. Classes with a high percentage of minority students are more likely to have 25 or more students (Barton, 2004). The more students that a teacher is responsible for the less individual attention they can receive. Students benefit from having the ability to participate and interact with their teacher. However, this benefit is negated when students are forced to learn in large class settings.

*Access to Technology.* Access to technology is another important factor in the achievement gap. While schools with high populations of minority students have computers, students in these schools are less likely to have access to these computers in the classroom (Barton, 2004). However, the issue of access to computers in schools has become increasingly less significant in recent years (Technology Counts 2007). However, gaps exist in the availability of Internet in the homes of minority and non-minority

students. Minority students are also less likely to be able to use the Internet for conducting research at home but have roughly the same access to computers in school as their advantaged peers (Technology Counts 2007). Barton (2004) found that 61 percent of students in schools with low minority enrollments were assigned Internet-based research assignments while only 35 percent of students in schools with a high minority enrollment were assigned these same types of research assignments. A high minority enrollment is defined as 80 percent or more while a low minority enrollment is defined as less than 20 percent according to the U.S. Department of Education (NCES, 2005).

*Unsafe Schools.* A final important factor highlighted by Barton (2004) is the impact of unsafe schools on the achievement gap. Students that attend schools in which they fear for their safety or worry about disruptions do not have an environment that is conducive to learning or study. The percentage of minority students that fears an attack at school or on the way to school is double that of nonminority students (pp. 12-13). Students need to feel safe and comfortable in order to be free to learn. Research has clearly shown that a positive disciplinary climate is directly linked to higher achievement (Barton, 2004, p. 12, Barton et al, 1998).

Related to the issue of unsafe schools is the consideration that must be given to the physical condition of school facilities. Urban schools with high minority populations are more likely to be dilapidated than schools in more affluent areas. These schools with crumbling structures and little financial and moral support face significant social and structural inequity (Talbert-Johnson, 2004).

### *Summary*

Each of the fourteen factors identified by Barton and others is important in understanding the complex nature of the academic achievement gap. The first set of contributing factors are environmental factors such as low-birth weight, lead poisoning, malnutrition, reading to young children, television, parental availability, student mobility, and parental participation. The second set of contributing factors are school factors such as rigor of curriculum, qualifications and experience of teachers, class size, access to technology, and school safety and physical conditions.

Any measure that aims to effectively close that gap needs consider each of these factors to holistically meet the needs of students and provide a quality education. The recent literature has critiqued and documented the effectiveness of the No Child Left Behind Act in closing the achievement gap since its adoption in 2001. Chapter Three will analyze the available data on student achievement and the achievement gap to examine the effectiveness of the No Child Left Behind Act.

## CHAPTER THREE

### *NCLB: Closing the Achievement Gap*

The importance of closing the achievement gap is inherent in the No Child Left Behind Act. It is also stressed by Miller (1995), who has written extensively about the issue:

The continued existence of substantial minority-majority educational gaps is prohibitively costly, not only for minorities, but for the nation as a whole. Among the most compelling reasons for seeking to eliminate these gaps as soon as possible are the following: 1) the achievement of significantly higher minority education levels is essential to the long-term productivity and competitiveness of the U.S. economy; 2) if minorities are to enjoy the full benefits of their recently won civil rights, they need formal-education-dependent knowledge and skills much closer in quantity and quality to those held by whites; and 3) the maintenance of a humane and harmonious society depends to a considerable degree on minorities' reaching educational parity with whites.

Clearly, there are numerous advantages to closing the achievement gap. Consequently, the effectiveness of NCLB in closing the gap should be examined.

The ultimate goal of the NCLB Act is the proficiency of all children in the United States in reading and mathematics by 2014. Inherent in this goal is the notion that NCLB will also close the achievement gap in America's schools. Examining the trends in the years immediately prior to NCLB and in subsequent years will offer some evidence of its impact.

The National Center for Educational Statistics (NCES) conducts research on the achievement gap as a part of the Institute of Education Sciences of the United States Department of Education. The research examines the achievement gap between both White and Hispanic students as well as between White and Black students at several different grade levels and ages. NCES has examined trends in the achievement gap over several decades dating back to 1973. The specific data that will be examined includes trends in the achievement gaps between 1999 and 2004. This data will help to examine the recent trends in the gap but includes information that is dated three years prior to the adoption of NCLB. Due to the relatively short time since the adoption of NCLB it is debatable whether these statistics accurately reflect the effectiveness of the legislation.

In terms of the White-Black gap in mathematics, NCES shows several positive trends in the period between 1999 and 2004 (Appendix A). The gap has decreased at ages 9, 13, and 17 over the five-year period that included the introduction of the NCLB Act. In 1999, the average scaled score gap in mathematics was 28 points at age 9, 32 points at age 13, and 31 points at age 17. In 2004, the average scaled score gaps in mathematics had closed to 23 points at age 9, 27 points at age 13, and 28 points at age 17 (NCES, 2005).

The trends in the White-Black gap in reading also show improvement in closing the achievement gap in the period between 1999 and 2004 (Appendix B). The gap has decreased at ages 9, 13, and 17 over the same five-year period. In 1999, the average scaled score gap in reading was 35 points at age 9, 29 points at age 13, and 31 points at age 17 (NCES, 2005). In 2004, the average scaled score gaps in reading had closed to 26 points at age 9, 22 points at age 13, and 29 points at age 17 (NCES, 2005).

NCES also monitored the trends in the White-Hispanic gap for mathematics and reading. For the 1999 to 2004 period, the NCES data show both positive and negative trends (Appendix C). In 1999, the average scaled score gaps in mathematics was 26 points at age 9, 24 points at age 13, and 22 points at age 17 (NCES, 2005). In 2004, the average scaled score gaps decreased to 18 points at age 9 and 23 points at age 13. However, the average scaled score gaps in 2004 increased to 24 points at age 17 (NCES, 2005).

In terms of the White-Hispanic reading gap, the NCES data showed progress in closing the gap and, in fact, showed the gap increasing rather dramatically in older adolescents (Appendix D). In 1999, the average scaled score gap in reading was 28 points at age 9, 23 points at age 13, and 24 points at age 17 (NCES, 2005). In 2004, the gap decreased to 21 points at age 9 (NCES, 2005). In 2004, the gap increased, however, at age 13 from 23 points to 24 points and more significantly from 24 points to 29 points at age 17 (NCES, 2005).

Other reports have been completed as well that have produced contradictory findings. According to Sam Dillon (2006), the Thomas B. Fordham Foundation, a conservative educational think tank, conducted a broad review of the state achievement exams and other indicators and issued a comprehensive report. The Foundation found that none of the 50 states had made widespread progress in narrowing the gap, and that eight states had made “moderate gains” (Dillon, 2006). This report would seem to be in contradiction to comments made in the most recent State of the Union address by President George W. Bush. In his remarks, President Bush claimed, “minority students are closing the achievement gap” (White House, 2007). According to information on the

White House web site for the Bush administration, No Child Left Behind is producing good results in 46 states and the District of Columbia improving or holding steady in all categories of fourth grade students tested in reading and math (White House, 2007). The Bush administration also cites several of the statistics from the NCES data as successes of NCLB. More reading progress was made by 9-year-olds between 1999 and 2004 than in the previous 28 years combined (White House, 2007). Furthermore, African American and Hispanic students' reading and math scores were up in the five years ending in 2004 (White House, 2007). Based on this data President Bush (2007) claims that African American and Hispanic students are beginning to close the achievement gap.

The Northwest Evaluation Association, a nonprofit group based in Oregon that administers achievement tests, found that the achievement gaps continue to exist. The organization conducted a study of 500,000 students in 24 states. The study concluded, "For each score level at each grade in each subject, minority students grew less than European-Americans, and students from poor schools grew less than those from wealthier ones (Dillon, 2006)."

The Nation's Report Card for 2005 issued by the National Assessment of Educational Progress showed a disparity in reading scores between White, Black, and Hispanic students in urban schools. According to the report, 26 percent of White students in grade four tested "below basic" compared to 62 percent of Black students and 60 percent of Hispanic students (NAEP, 2005). The disparity in scores was still significantly different in grade eight with 19 percent of White students testing "below basic" compared to 52 percent of Black students and 47 percent of Hispanic students (NAEP, 2005). Additional information in the report states that the reading gap between white and

minority students remains unchanged. The report also states that the percentage of students performing at or above proficient in reading has decreased since 1992 for White students (NAEP, 2005). Whether a decrease in the gap between White and Black or Hispanic students in reading scores would actually represent a meaningful improvement is debatable depending on one's position and political agenda. One constituency may identify these results as progress while another may instead highlight the significantly higher percentage of minority students testing "below basic."

### *Proposed Strategies*

Recently, many scholars have recently published articles that outline methods that are necessary to effectively close the achievement gap. The strategies range from simple expectations to complex and multi-faceted programs. A number of these strategies for closing the academic achievement gap will be discussed next. These strategies share some similarities with principles of the NCLB legislation and also offer some different approaches to closing the gap. Various strategies from different schools of thought constitute important considerations when addressing the issue because of the complexity and multitude of factors that contribute to the achievement gap.

Paul Barton, a scholar who has written extensively on the 14 contributing factors, also suggests several general strategies for making significant progress in closing the achievement gap. These strategies include raising the quality of instruction in schools, investing resources in out-of-school programs including after-school and summer experiences, and developing social and economic policies that enable children to attend school more equally ready to learn (Barton, 2004).

Providing a higher quality of instruction is important and better school practices can probably narrow the gap (Barton, 2004). House (2006) supports this position and claims that the gap we hear least about is the one between a rigorous, intellectually challenging curriculum and the rote instructional program that is commonplace in far too many classrooms. She argues that a high-quality education will prepare students for the world in which they will live and work and all students are entitled to that opportunity.

Barton (2004) also argues for investing in resources to expand the definition of schooling to include out-of-school hours in which families and communities are now the sole – and disparate – influences. He maintains that such efforts should be concentrated on early childhood programs for infants and toddlers because the gap is already significant among three-year-olds. The ultimate goal of such a program would be to provide the kind of intellectual environment those children, who are growing up in low-income communities, typically experience (Barton, 2004).

The experiences should not only be focused on early childhood programs. Resources should also be allocated to students to provide after-school and summer experiences to low-income students similar to those that are given to middle-class students. These experiences should be diverse and not simply consist of summer school classes in math and reading but rather offer opportunities to participate in after-school athletics, dance, drama, museum visits, recreation and reading (Barton, 2004). According to Barton (2004), these activities should focus on developing students' inquisitiveness, creativity, self-discipline, and organizational skills.

The final recommendation by Barton (2004) is for federal and state governments to develop social and economic policies that enable children to attend school more

equally ready to learn. Barton (2004) lists several components of this strategy including health services for low-income children and families, providing stable housing for working families and children, taking aggressive action against discrimination, and boosting the incomes of working parents employed in low-wage occupations. Each of these reforms would help to raise the quality of life for low-income families and help children enter school with more equal resources and support as their middle and upper class peers.

Barton's strategies for closing the gap appear to be tied to several of the main contributing factors. Barton addresses the rigor of curriculum, allocating additional funding for preparing children for school, teacher qualifications and experience, and after and out-of-school programs. These recommendations could impact several of the contributing factors including curriculum rigor, extent of teacher preparation, hunger and nutrition, reading to young children, and excessive television watching. While not explicitly stated in his proposed strategies, effective out-of-school programs, revised curriculum, and increased instruction time will influence each of these factors. At this time, however, there does not appear to be any data specifically on Barton's intervention strategies and their effectiveness on closing the achievement gap.

Recently the Aspen Institute's Commission on No Child Left Behind released a series of recommendations for the reauthorization debate in Congress (Capitol Comments, 2007). Among the Commission's recommendations were:

- Requiring all teachers to be Highly Qualified Effective Teachers – teachers who demonstrate effectiveness in the classroom.

- Requiring Title I and non-Title I schools to have similar expenditures for teacher salaries and comparable number of Highly Qualified Effective Teachers (HQET).
- Enhancing school leadership by establishing a definition of a Highly Qualified Principal (HQP).
- Restricting the minimum subgroup size to no more than 20 and confidence intervals to no less than 95 percent to hold schools accountable for the achievement of all students.
- Strengthening the procedures used for determining which children are included in subgroups and improving the tools and resources available for IEP teams to make those decisions.
- Expanding the availability and quality of options for students in schools that do not make AYP.
- Providing more aggressive and effective interventions for schools that are struggling.
- Developing voluntary model national content and performance standards and tests in reading or language arts, mathematics or science based on NAEP frameworks.
- Requiring districts with large concentrations of struggling high schools to develop and implement comprehensive, district wide high school improvement plans.
- Requiring all states to design and implement a high-quality longitudinal data system within four years of the enactment of a reauthorized NCLB.

Each of these measures attempts to strengthen the existing NCLB legislation and, subsequently, help to improve public schools, the quality of education for all students, and close the academic achievement gaps.

The National Council of Teachers of English (NCTE) (2006) is an organization with more than 50,000 members dedicated to closing the achievement gap through accountability, flexibility, and high quality instruction. In November 2006, NCTE released a series of recommendations for the NCLB reauthorization debate. Its report (2006) included the following five recommendations:

1. Multiple criteria should be used to determine student progress, and assessment should provide timely information that teachers can use to improve instruction.
2. Professional development is essential to insure highly qualified teachers.
3. The most highly qualified teachers should teach and tutor in schools with the greatest number of high-need students.
4. Establish for Reading First an objective peer review system of observable data by an independent panel that represents multiple perspectives.
5. State growth models should be used to provide longitudinal data about individual students and subgroups.

The report by NCTE (2006) supplies research-based rationales for each recommendation and provides the names of other organizations that have made similar recommendations.

California has been on the forefront of educational reforms and innovative thinking on public education for years. Recently, a study by the Center on Educational Policy (CEP) in California made three major recommendations for consideration in the NCLB reauthorization. The CEP recommendations (2007) were to encourage states to develop methods to measure teacher effectiveness and refine the NCLB definition of a highly qualified teacher, support a comprehensive approach to recruiting and retaining

teachers in high-need schools, and provide resources to states to develop and implement comprehensive data systems.

Numerous recommendations and revisions were put forth in early 2007 as the debate on the reauthorization of NCLB neared Congressional debate. The statistics have shown data that both supports and calls into question the arguments that the achievement gap has narrowed. Regardless of the current trends, there is still considerable work to be done to close the achievement gap. The opportunity to revisit the legislation presents politicians with the opportunity to listen to the advice of teachers and administrators who are struggling with the achievement gap on a daily basis. These same educators have been a significant part of the various committees and commissions that have researched the achievement gap extensively and produced a series of recommendations aimed at improving schools, enhancing the quality of education, and closing the achievement gap. Regardless of the current trends and statistics on the achievement gap, the upcoming discussion in Congress offers significant potential for closing the achievement gap and improving the educational opportunities for all children.

## CHAPTER FOUR

### *Summary of the Study*

The academic achievement gap is a current and significant issue in education. Student scores in low-income areas of every state are falling behind and performing significantly below their peers in middle and upper class families. The achievement gap has been a major issue confronting teachers, administrators, and policymakers for decades. Despite new efforts such as the No Child Left Behind Act, the achievement gap is likely to be an educational reality for years to come without significant and sustained reforms.

This review examined the main elements, guiding principles, and ultimate goal of NCLB for total proficiency for every child by 2014. This analysis and subsequent understanding serves as a framework for the broader discussion of the contributing factors to the achievement gap. Ultimately, examining the contributing factors and the trends in scores under NCLB concurrently will help reveal the extent to which the legislation has been effective in closing the achievement gap.

A number of the most widely accepted contributing factors to the achievement gap was highlighted in Chapter Two. Each of Barton's 14 contributing factors was discussed (2004). Supported by other research, these factors included an analysis of environmental factors that occur outside of school and in the home such as parental availability, lead poisoning, and student mobility, and school-related factors such as the rigor of the curriculum, class size, and the qualifications of faculty.

Statistics from NCES (2000) and NAEP (2005) were provided to illustrate the recent trends in the achievement gap between 1999 and 2004 as well as reading score

averages in urban schools in 2005 for White, Black, and Hispanic students. Statistics help to evaluate the progress of No Child Left Behind in closing the academic achievement gap in the United States. The statistics show, at times, conflicting findings on whether NCLB has indeed closed the existing achievement gaps. This inconsistency is a result of different data collection methods as well as the particular interests of the organization or agency conducting the study.

Chapter Three also highlighted a number of recommendations for closing the achievement gap. Recommendations by Barton (2004), NCTE (2006), and the Aspen Institute's Commission on No Child Left Behind (Capitol Comments, 2007) for closing the gap, and more specifically, for consideration in the NCLB reauthorization debate in Congress were included. The recommendations included enhancing professional development, expanding options for students in failing schools, expanding out-of-school opportunities, and requiring districts to develop long-term strategic plans for improvement.

### *Conclusions*

Current statistics make it difficult to effectively determine the extent to which NCLB has closed the academic achievement gap. It is difficult to determine the effect of the legislation due to the relatively short time since its passage in 2001. Considering the long-term goal of all children being proficient by 2014, more conclusive studies on the effectiveness of NCLB will need to be conducted regularly.

At the time of the writing of this review, the reauthorization debate on NCLB has begun in Congress. There are several important contributing factors to the academic achievement gap that need to be considered. Legislators should be mindful of these

contributing factors as they revise components of the NCLB legislation during the reauthorization process.

Many of the contributing factors that are associated with schools can be influenced by legislation. Specifically, the rigor of curriculum, teacher experience and attendance, teacher preparation and professional development, and technology-assisted instruction can all be directly impacted by school district policy as well as legislation. Furthermore, class size will also likely be influenced by several other contributing factors such as teacher attendance and preparation.

Due to the relatively short time since NCLB's passage into law, it is difficult to make solid inferences from the data. The data that has been compiled is also confounded because of the inclusion of pre- and post-NCLB statistics. Furthermore, even the data that has been collected after NCLB may well have been influenced by preexisting conditions and not necessarily be indicative of the law. Data will need to be collected over the minimum of a five-year period to allow for the first generation of standardized test takers to progress from 3<sup>rd</sup> to 8<sup>th</sup> grade. An even more accurate analysis would require nine years to allow for students to progress from Kindergarten through 8<sup>th</sup> grade to assess the entirety of their education (through the end of federally mandated state testing under NCLB) and the subsequent trends in the achievement gap. This analysis may well reflect the quality of education received in the NCLB era and how the legislation has influenced the trends in the achievement gap over several years.

#### *Recommendations*

There are several areas that need to be explored in future studies. With the shifting trends in the data on the achievement gap, annual studies should be conducted to

monitor progress over time. This is especially true when evaluating the effectiveness of NCLB in closing the achievement gap. The data that is currently available for study only encapsulates the first few years of NCLB and therefore is not a reliable indicator of effectiveness.

Schools need to operate under NCLB for several more years before accurate projections can be made about the possible positive or negative impact of the legislation on the gap. Many schools have struggled to effectively implement components of the NCLB into their short or long term academic strategic plans. With the implications of AYP for school funding, schools need additional time to develop strategies for combating the achievement gap with strained resources to avoid being placed under watch or face being closed down.

Studies must be conducted in the years to come. These studies must reexamine the data on the achievement gap every year until the target date of 2014. This data will be especially useful after 7 years of implementation when the majority of students tested in 3<sup>rd</sup> grade under the annual standardized testing component of NCLB will have progressed through the 10<sup>th</sup> grade proficiency exams administered in Ohio and many other states. This data must be analyzed to track individual student improvement, long-term school progress, and major trends in the achievement gap on district, state, and national levels.

Additional research must be conducted on the relationship between contributing factors and specific intervention strategies. With NCLB up for reauthorization, government funding should earmarked for programs and interventions that demonstrate positive results in closing the achievement gap. Correlating contributing factors and specific interventions to determine effectiveness will help to identify best practices and

improve the existing legislation. Broad overviews of the contributing factors, such as Barton's (2005) literature, are of significant value to educators and administrators. However, a more thorough analysis of individual factors and intervention strategies might provide useful information for legislators who, ultimately, shape schools through policy and budgetary decisions.

Specifically, studies need to be commissioned that extract a single contributing factor such as teacher qualifications and experience and a specific component of the legislation that impacts this factor to better determine the effectiveness of NCLB. For example, a student can examine areas where schools are traditionally staffed by teachers that are instructing outside of their subject of expertise or have limited or inadequate teaching credentials. The study can examine student scores, the composition and qualifications of the faculty, the funding allocated under NCLB for professional development and recruitment of highly-qualified teachers, and the trends in scores as schools receive funding to recruit more highly-qualified teachers into the district. If scores improve as more qualified teachers are recruited into the school system, then one might perhaps be able to conclude that NCLB is effective in addressing that specific contributing factor to the achievement gap.

Similar studies can be conducted for each of the specific contributing factors so to determine the effectiveness of NCLB as opposed to broad analysis of student scores and trends to make this determination. Only by examining the effect of NCLB on specific contributing factors and the subsequent trends in student populations can one accurately assert that NCLB is closing the achievement gap as opposed to other preexisting conditions and influences. It is important to note, however, that there are many

confounding variables that will make it difficult to draw a direct and irrefutable link between any one specific contributing factor and test scores.

## REFERENCES

- Almond, D., Chay, K.Y., & Lee D.S. (2004). *The costs of low birth weigh* (NBER Working Paper No. 10552). Cambridge, MA: National Bureau of Economic Research.
- Almond, D. & Chay, K.Y. (2003). *The long-run and intergenerational impact of poor Infant health: Evidence from cohorts born during the Civil Rights Era* Cambridge, MA: National Bureau of Economic Research. Retrieved May 9 2007, from <http://www.nber.org/~almond/cohorts.pdf>.
- Barton, P.E. (2003). *Parsing the achievement gap*. Princeton, NJ: Educational Testing Service.
- Barton, P.E. (2004). Why does the gap persist? *Educational Leadership*, 62, 8-13.
- Barton, P.E. (2005). Achievement gaps: Past and present. *Principal*, 84, 12-16.
- Barton, P.E., Coley, R.J., & Wenglinsky, H. (1998). *Order in the classroom: Violence, discipline, and student achievement*. Princeton, NJ: Educational Testing Service.
- Behrman, J.R., Rosenzweig, M.R., & Taubman, P. (1994). Endowments and the allocation of schooling in the family and in the marriage market: The twins experiment. *Journal of Political Economy*. CII. 1131-1174.
- Behrman, J.R. & Rosenzweig, M.R. (2001). The returns to increasing body weight. PIER Working paper No. 01-052.
- Berlak, H. (2001). Race and the achievement gap. *Rethinking Schools Online*, 15. Retrieved November 16, 2006, from [http://www.rethinkingschoolsonline.org/archive/15\\_04/Race154.shtml](http://www.rethinkingschoolsonline.org/archive/15_04/Race154.shtml).
- Berlak, H. (2001). *Academic achievement, race, and reform*. (2001, May 19). Retrieved May 9, 2007, from <http://www.edjustice.org/pdf/raceassess.pdf>.
- Bush defends 'No Child Left Behind'*. (2007, April 12). Retrieved April 16, 2007, from <http://www.msnbc.msn.com/id/18080691>.
- Bush: State of union is strong*. (2007, January 23). Retrieved May 8, 2007, from <http://www.cnn.com/2007/POLITICS/01/23/sotu.bush.transcript/index.html#2>.
- Ceci, S.J., & Papierno, P.B. (2005). The rhetoric and reality of gap closing. *American Psychologist*, 60, 149-160.

- Center on Education Policy. *Principles for Reauthorizing the teacher provisions of the No Child Left Behind Act and the Higher Education Act*. (2007, February). Retrieved May 28, 2007, from [www.cep-dc.org](http://www.cep-dc.org).
- Child Trends Data Bank. (2003). *Parent involvement in schools* [Online]. Available: [www.childtrendsdatabank.org/pdf/39\\_pdf.pdf](http://www.childtrendsdatabank.org/pdf/39_pdf.pdf).
- Christakis, D.A., Zimmerman, F.J., DiGiuseppe, D.L., & McCarty, C.A. (2004). Early television exposure and subsequent attentional problems in children. *Pediatrics*, 113(4), 708-713.
- The Civil Rights Project: Harvard University (2006). Testing the NCLB: Study shows that NCLB hasn't significantly impacted national achievement scores or narrowed the racial gaps. Retrieved November 16, 2006, from [http://www.civilrightsproject.harvard.edu/news/pressreleases/nclb\\_report06.php](http://www.civilrightsproject.harvard.edu/news/pressreleases/nclb_report06.php).
- Currie, J. & Moretti, E. (1999). Is the impact of health shocks cushioned by Socioeconomic status? The case of low birth weight. *AEA Papers and Proceedings*. LXXXIX. 245-250.
- DeRoche, T. (2004). Not just a necessary evil; When teachers embrace standards and testing. [Electronic version]. *Education Week*, 3-4.
- Dillon, S. (2006, November 21). Achievement gaps still persist despite educational measure. *The Columbus Dispatch*, p. A5.
- Does better nutrition improve academic quality? Yes*. (1997). World Bank Policy and Research Bulletin. Retrieved May 9, 2007, from <http://www.worldbank.org/html/dec/Publications/Bulletins/prb8,2.htm>.
- ESEA Timeline*. (n.d.). Retrieved May 8, 2007, from <http://www.nea.org/esea/images/esea-timeline.pdf>.
- Gentile, D.A., Oberg, C., Sherwood, N.E., Story, M., Walsh, D.A., & Hogan, M. (2004). Well-child visits in the video age: pediatricians and the American Academy of Pediatrics' guidelines for children's media use. *Pediatrics*, 114(5). 1235-41.
- Gentzkow, M. & Shapiro, J.M. (2006). *Does television rot your brain? New evidence from the Coleman study* (NBER Working Paper 12021). Cambridge, MA: National Bureau of Economic Research.
- Haycock, K. (2001). Closing the achievement gap. *Educational Leadership*, 58, 6-11.
- House, G. (2006). Closing the 'reality gap'. *American School Board Journal*. Special Report. Retrieved November 16, 2006, from <http://www.asbj.com/specialreports/0406SpecialReports/S4.html>.

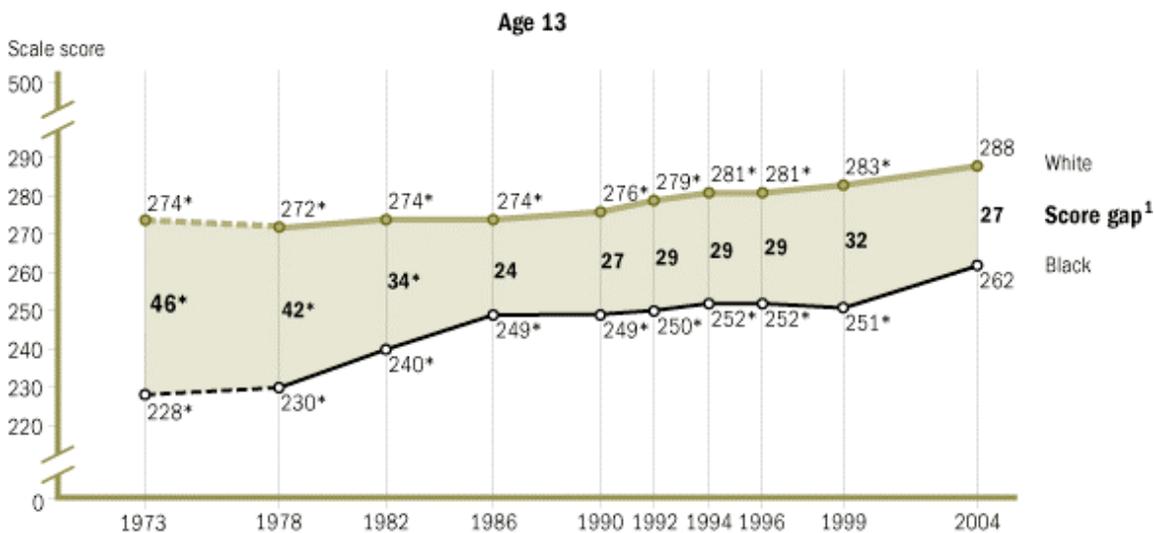
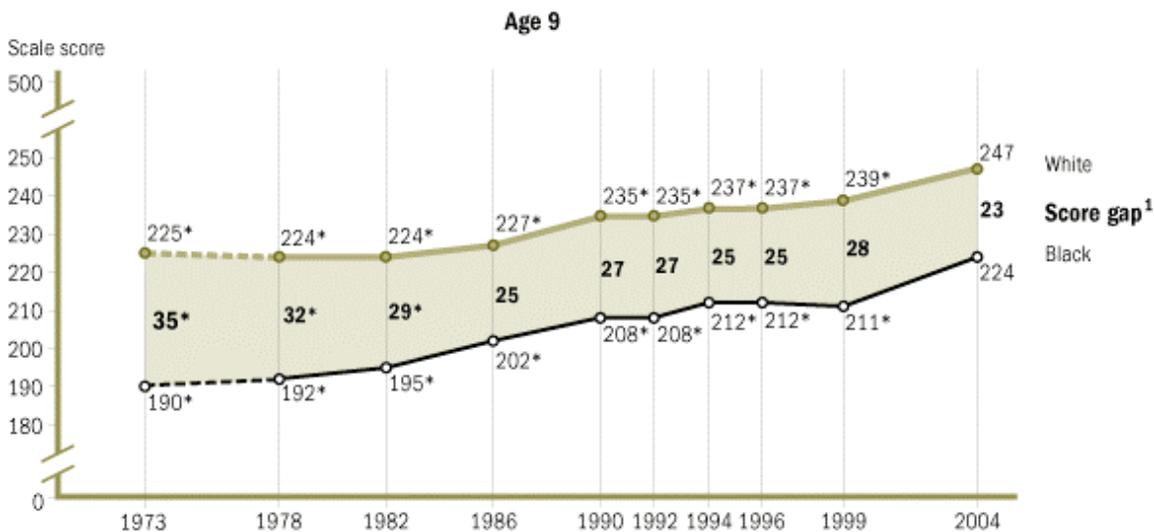
- Indicator 31 (2005) Minority Student Enrollments.* (n.d.). Retrieved May 9, 2007, from <http://nces.ed.gov/programs/coe/2005/section5/indicator31.asp>.
- Kentucky Department of Education. *Instructional equity/Closing the achievement gap.* (2007, April 06). Retrieved May 8, 2007, from <http://www.kde.state.ky.us/KDE/Instructional+Resources/Closing+the+Gap/>.
- Mathis, W.J., (2005). Bridging the achievement gap: A bridge too far? *Phi Delta Kappan*, 86, 590-593.
- Metropolitan Housing Council. (2004). *Moving on: Student mobility and affordable housing.* Louisville, KY: Author. Available: [www.metropolitanhousing.org/studentmobility\\_files/frame.htm](http://www.metropolitanhousing.org/studentmobility_files/frame.htm).
- Miller, L.S. (1995). *An American imperative: Accelerating minority educational advancement.* New Haven: CT: Yale University Press.
- NAEP 2005 – Assessment results – reading grade 12: Students group results: Race/ethnicity.* (2005). Retrieved May 9, 2007, from [http://nationsreportcard.gov/reading\\_math\\_grade12\\_2005/s0207.asp](http://nationsreportcard.gov/reading_math_grade12_2005/s0207.asp).
- NAEP – Mathematics trends by race/ethnicity: White-black gap.* (2005, July 06). Retrieved May 8, 2007, from <http://nces.ed.gov/nationsreportcard/ltr/results2004/sub-math-race.asp>.
- NAEP – Mathematics trends by race/ethnicity: White-Hispanic gap.* (2005, July 06). Retrieved May 8, 2007, from [http://nces.ed.gov/nationsreportcard/ltr/results2004/sub\\_math\\_race2.asp](http://nces.ed.gov/nationsreportcard/ltr/results2004/sub_math_race2.asp).
- NAEP – Reading trends by race/ethnicity: White-black gap.* (2005, July 06). Retrieved May 8, 2007, from <http://nces.ed.gov/nationsreportcard/ltr/results2004/sub-reading-race.asp>.
- NAEP – Reading trends by race/ethnicity: White-Hispanic gap.* (2005, July 06). Retrieved May 8, 2007, from [http://nces.ed.gov/nationsreportcard/ltr/results2004/sub\\_reading\\_race2.asp](http://nces.ed.gov/nationsreportcard/ltr/results2004/sub_reading_race2.asp).
- National Center for Education Statistics. *Trends in academic progress: Three decades of student performance.* Washington, D.C.: U.S. Department of Education, 2000.
- National Council of Teachers of English. *NCLB Recommendations.* (2006). Retrieved May 28, 2007, from <http://www.ncte.org/about/over/positions/category/gov/126451.htm>.

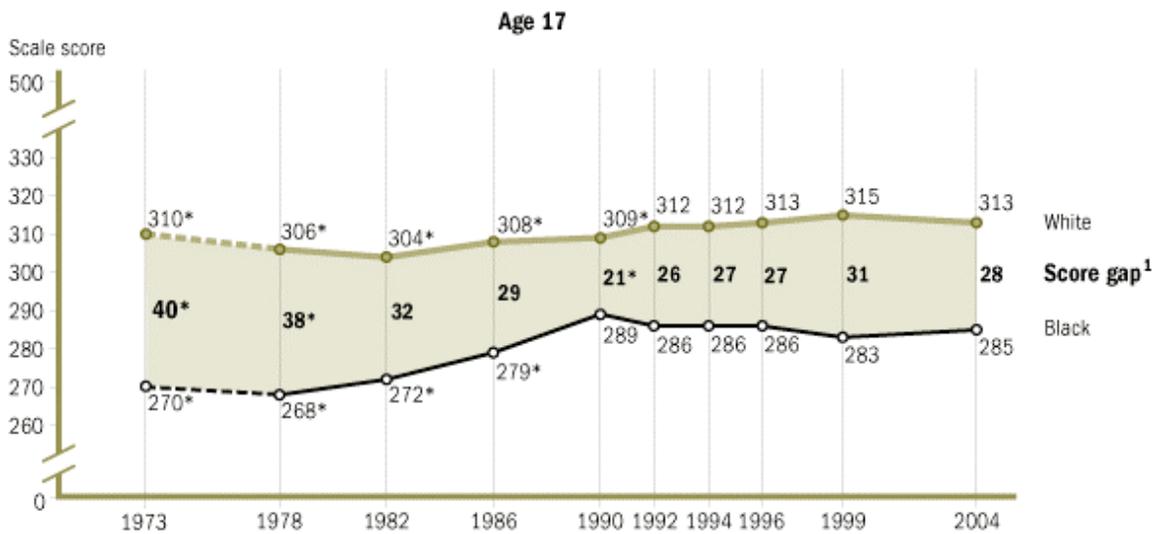
- National Education Association. *History of NCLB*. (2006). Retrieved May 28, 2007, from <http://www.nea.org/neatoday/0604/nclbtimeline.html>.
- National Education Association. *NEA: NCLB timeline*. (n.d.). Retrieved May 8, 2007, from <http://www.nea.org/neatoday/0604/nclbtimeline.html>.
- National Study Group for the Affirmative Development of Academic Ability. (2004). *All Student reaching the top*. Naperville, IL: Learning Point Associates.
- No Child Left Behind Act of 2001, Pub. L. No. 107-110, 115 Stat. 1425 (20002). Retrieved May 7, 2007, from <http://www.ed.gov/policy/elsec/leg/esea02/index.html>.
- Capitol Comments: Panel makes NCLB recommendations*. (2007). Retrieved May 9, 2007, from [http://capitalcomments.typepad.com/capital\\_comments/2007/02/the\\_commission.html](http://capitalcomments.typepad.com/capital_comments/2007/02/the_commission.html).
- Problem of lead poisoning*. (n.d.). Retrieved May 9, 2007, from <http://www.leadpoison.net/about-lead.htm>.
- Quality Counts 2003. *Education Week*, January 9, 2003, 56.
- Rabiner, D.L., Murray, D.W., Schmid, L., & Malone, P.S. (2004). An exploration of the Relationship between ethnicity, attention problems, and academic achievement. *School Psychology Review*, 33, 498-509.
- Rodriguez, E. (2001). The search for qualified teachers. *Policy Perspectives*, 2(6), 1-3.
- Rothstein, R. (2004). Class and the classroom. *American School Board Journal*, 191. Retrieved November 16, 2006, from <http://www.asbg.com/2004/10/2004coverstory.html>.
- Rothstein, R. (2004). The achievement gap: A broader picture. *Educational Leadership*, 62, 40-43.
- Shannon, G.S., & Bylsma, P. (2002). *Addressing the achievement gap: A challenge for Washington state educators*. (Document Number 02-0060). Olympia, WA: Office of Superintendent of Public Instruction.
- Talbert-Johnson, C. (2004). Structural inequities and the achievement gap in urban schools. *Education and Urban Society*, 37, 22-36.
- Technology Counts 2007: A Digital Decade. (2007). *Education Week*. 26, 8-41.

- U. S. Department of Education. *Achievement gap – Stronger accountability*. (n.d.). Retrieved May 8, 2007, from <http://www.ed.gov/nclb/accountability/achieve/edpicks.jhtml?src=qc>.
- U. S. Department of Education. *Charting the course: States decide major provisions under No Child Left Behind*. (2005, May 12). Retrieved May 8, 2007, from <http://www.ed.gov/news/pressreleases/2004/01/01142004.html>.
- U. S. Department of Education. *Choices for parents*. (2007, April 30). Retrieved May 8, 2007, from <http://www.ed.gov/nclb/choice/index.html?src=ov>.
- U. S. Department of Education. *Facts and terms every parent should know about NCLB*. (2005, September 19). Retrieved May 8, 2007, from <http://www.ed.gov/nclb/overview/intro/parents/parentfacts.html>.
- U. S. Department of Education. *Growth models: Ensuring grade-level proficiency for all students by 2014*. (2006, November 09). Retrieved May 8, from <http://www.ed.gov/admins/lead/account/growthmodel/proficiency.html>.
- U. S. Department of Education. *More local freedom*. (2004, February 10). Retrieved May 8, 2007, from <http://www.ed.gov/nclb/freedom/index.html?src=ov>.
- U. S. General Accounting Office. (1999). *Lead poisoning: Federal health care programs are not effectively reaching at-risk children* (GAO/HEHS-99-18). Washington, DC: Author.
- The White House. *President Bush delivers State of the Union address*. (2007, January 23). Retrieved May 28, 2007, from <http://www.whitehouse.gov/news/releases/2007/01/20070123-2.html>.
- The White House. *Fact sheet: The No Child Left Behind Act: Five years of results for America's children*. (2007, January 8). Retrieved May 28, 2007, from <http://www.whitehouse.gov/news/releases/2007/01/20070108-6.html>.

### APPENDIX A

#### NCES Trends in Average Mathematics Scale Scores: Black-White Gap

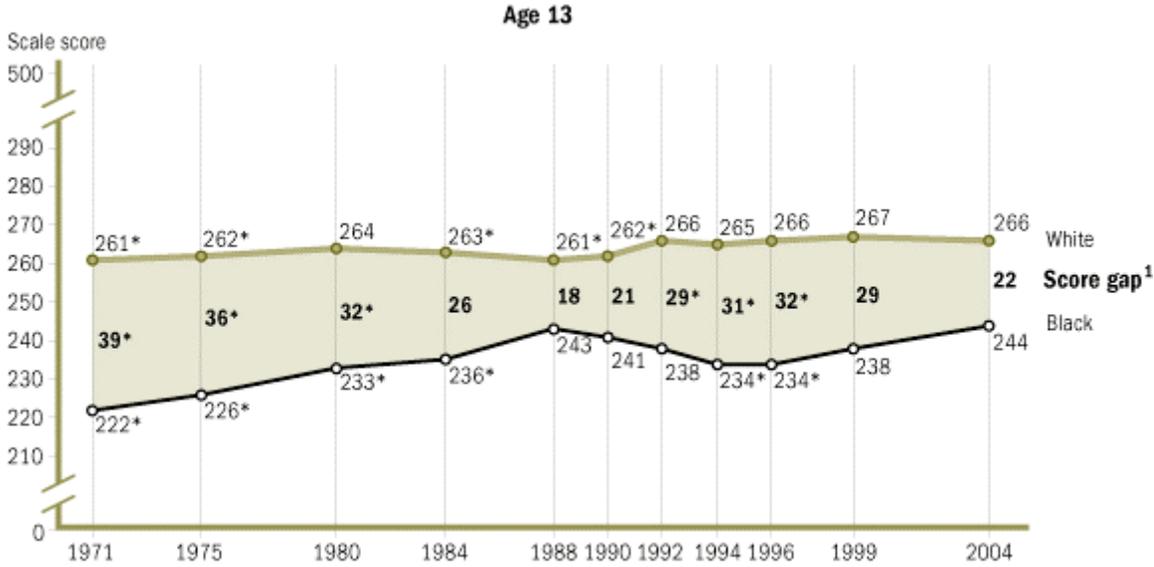
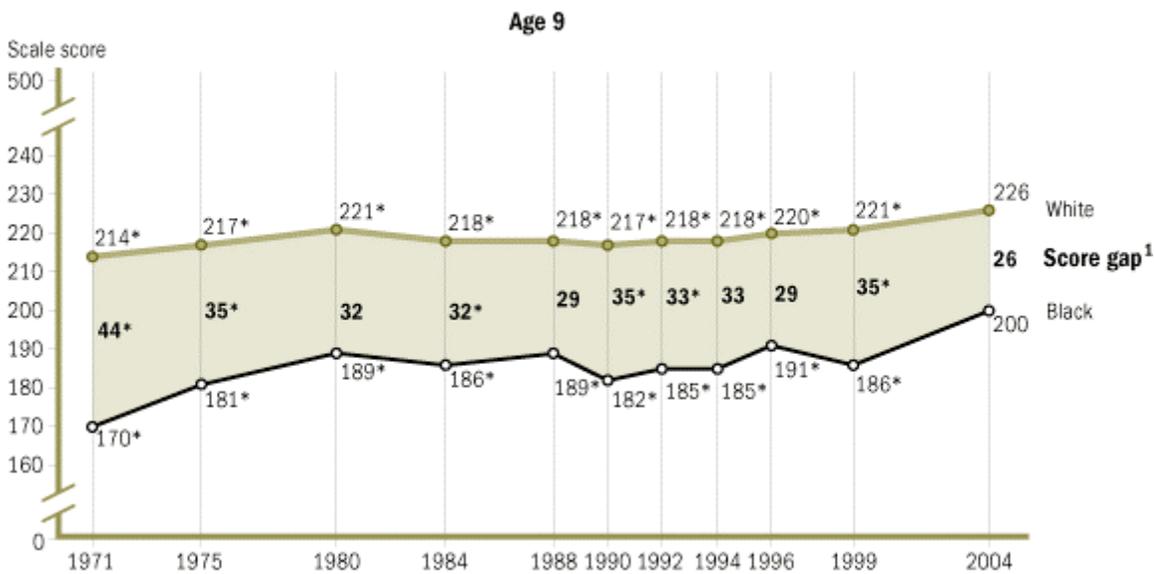




Source: *NAEP – Mathematics trends by race/ethnicity: White-black gap*. (2005, July 06). Retrieved May 8, 2007, from <http://nces.ed.gov/nationsreportcard/ltt/results2004/sub-math-race.asp>.

### APPENDIX B

#### NCES Trends in Average Reading Scale Scores: White-Black Gap

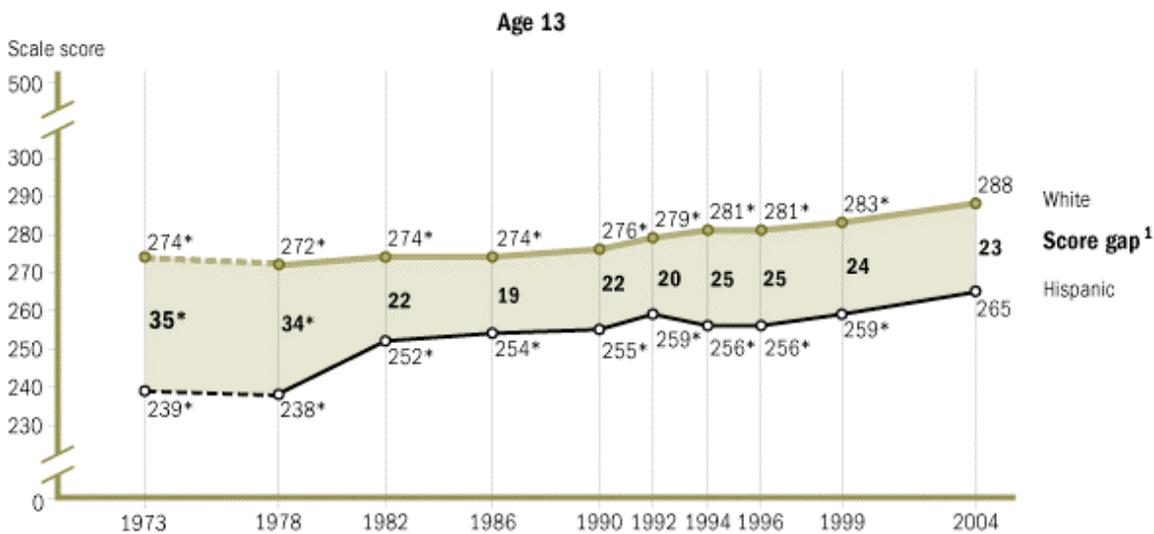
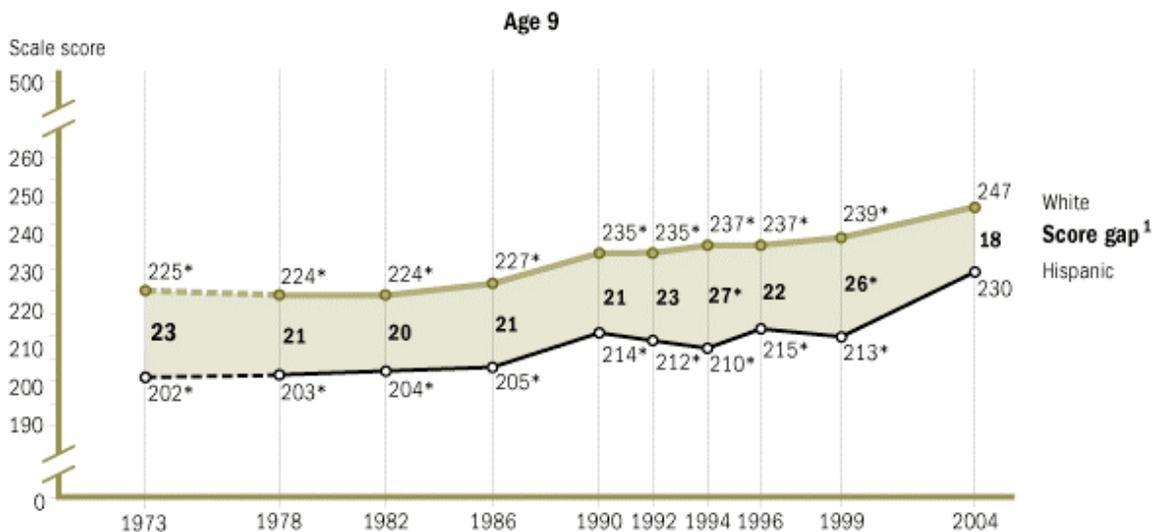




Source: *NAEP – Reading trends by race/ethnicity: White-black gap*. (2005, July 06). Retrieved May 8, 2007, from <http://nces.ed.gov/nationsreportcard/lt/results2004/sub-reading-race.asp>.

### APPENDIX C

#### NCES Trends in Average Mathematics Scale Scores: White-Hispanic Gap

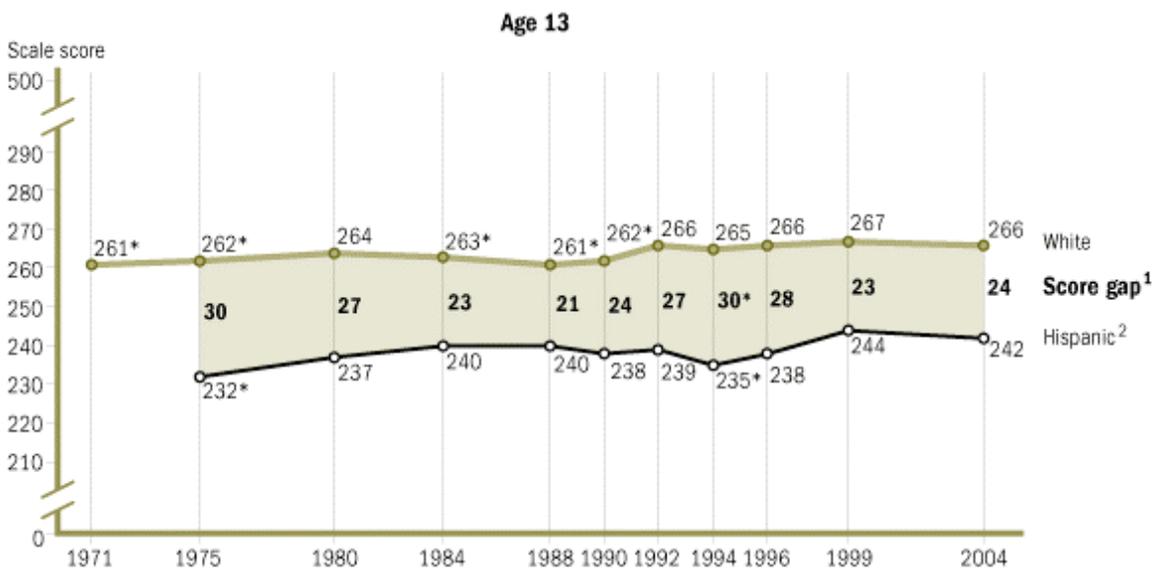
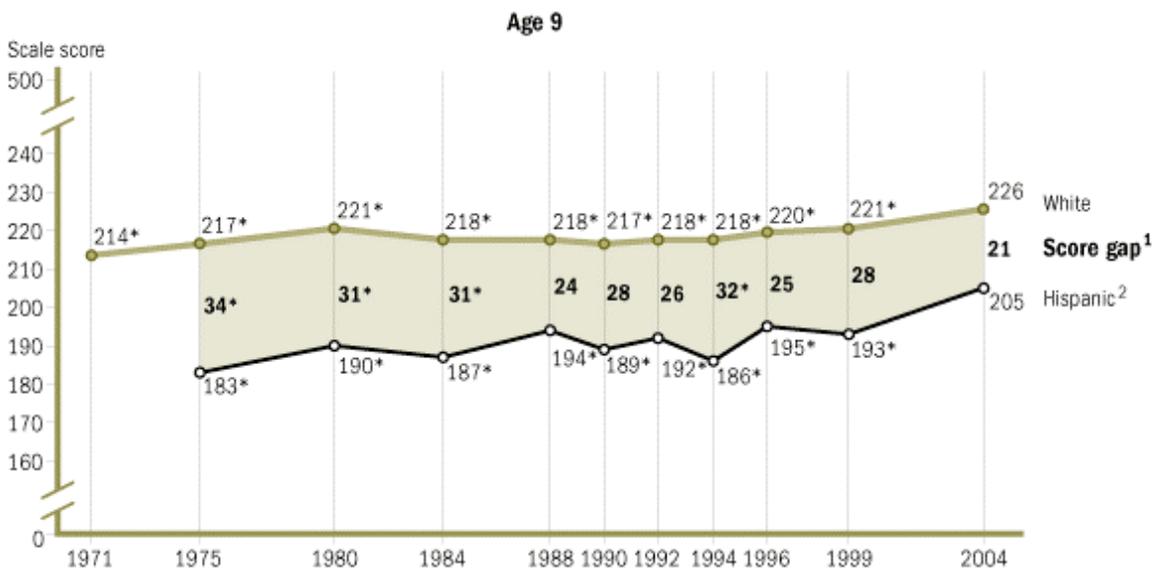


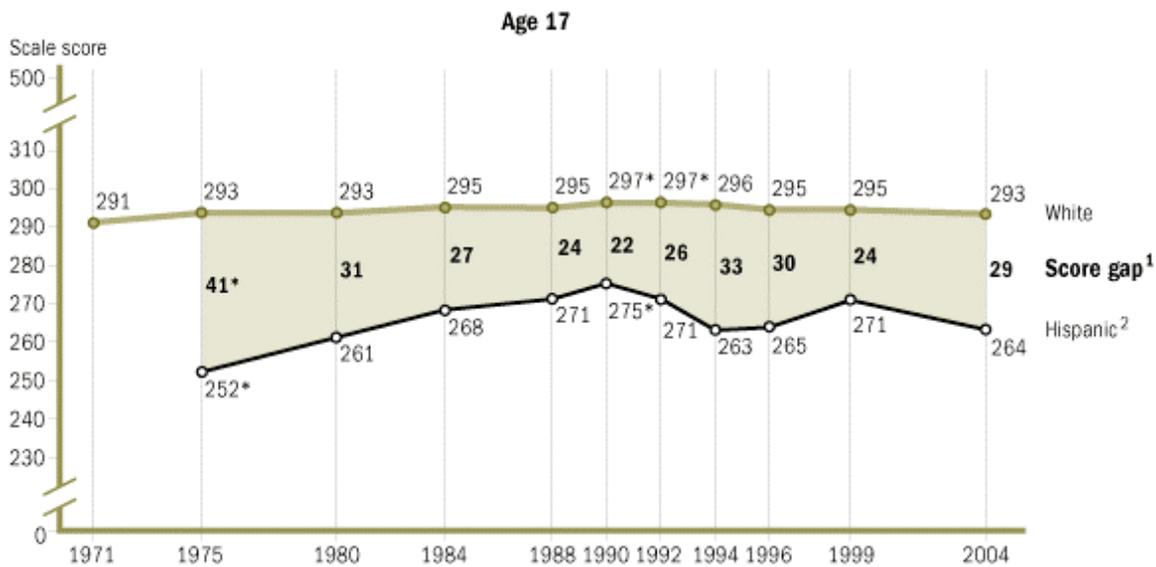


Source: *NAEP – Mathematics trends by race/ethnicity: White-Hispanic gap.* (2005, July 06). Retrieved May 8, 2007, from [http://nces.ed.gov/nationsreportcard/ltr/results2004/sub\\_math\\_race2.asp](http://nces.ed.gov/nationsreportcard/ltr/results2004/sub_math_race2.asp).

### APPENDIX D

#### NCES Trends in Average Reading Scale Scores: White-Hispanic Gap





Source: *NAEP – Reading trends by race/ethnicity: White-Hispanic gap*. (2005, July 06). Retrieved May 8, 2007, from [http://nces.ed.gov/nationsreportcard/ltr/results2004/sub\\_reading\\_race2.asp](http://nces.ed.gov/nationsreportcard/ltr/results2004/sub_reading_race2.asp)