

CLOSING THE ACHIEVEMENT GAP:  
THE IMPLEMENTATION OF DIRECT INSTRUCTION  
IN WHITEVILLE CITY SCHOOLS

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## ABSTRACT

In Whiteville City Schools, beginning third grade students have a reading achievement gap as evidenced by students who score Level 3 or 4 on the *Third Grade Pre-Test*. Historically, the largest gap has been between African American males and White females. The achievement gap also extends to a gap in mathematics proficiency. In addition to having achievement gaps by race and gender, overall third grade students in Whiteville City Schools have proficiency levels that are lower than the state average and lower than those of comparable local schools. This thesis reports on an effort to close and eventually eliminate the achievement gap and raise proficiency overall; specifically, at the primary school, Direct Instruction was implemented as the reading program. Direct Instruction has proven successful as an effective method of instructing all children, particularly African American, in reading. The research has shown that success in reading is effective in closing achievement gaps. Findings show that, after adopting Direct Instruction at this one school, student achievement and proficiency increased and the achievement gap closed.

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For helping me pull this thesis together and being so patient, I thank Dr. John Rice.

## DEDICATION

This thesis is dedicated to my son, Willie E. Travis II, for being my hero and the “wind beneath my wings.” At such a tender age, Will has experienced many challenging and life altering situations, and he handled them all without one complaint. As Will starts a new phase and responsibility in his life, he has my full support, approval, and love..

I also dedicate this thesis to the millions of other sons and daughters who are at risk for failure unless some caring educator, like Mrs. High, will search for a proven scientifically sound method for teaching children to read and attain the American dream. This thesis is dedicated to all educators who are effectively trying to make a difference in the lives of our children and ultimately our society.

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## CHAPTER 1: INTRODUCTION

Students from poor and minority groups face a very uncertain time in U. S. education. “Their economic and social conditions are deteriorating without relief in sight, and the progressive curriculum reforms, if carried out one school at a time, will almost certainly place them at an even greater disadvantage. . . . Our gravest concern is whether there is sufficient commitment in our society to significantly and directly address the problems of educational equity through any sustained and coherent strategy. . . . [The] vision of change must be powerful enough to focus the public and all the levels of the governance system on common challenging purposes and to sustain that focus over an extended period of time” (O’Day and Smith, 1993, pp. 267, 298-299). Ever since Africans were forcibly removed from their native land, African Americans have long been poorly served or not served at all by educational institutions in the United States. During the slavery era, education for African Americans was against the law and it was illegal for African Americans to be able to read and write. It was also illegal for anyone to teach them how to read and write. When educational opportunities were finally given to African Americans, the educational facilities were segregated and inferior, under the guise of being separate but equal. Even though landmark legislation has outlawed “separate but equal” educational opportunities, economic segregation still allows for a separate but highly unequal educational opportunity. Today, 48 years after *Brown vs. Board of Education*, African Americans have access to equal educational opportunities, but there is still a substantial academic achievement gap between White students and African American males and females.

A disproportionate number of disciplinary actions are taken against African American students;  
these children are tracked into special low-achievement

classes; and there is continued disparity in standardized test results. Moreover, these developments and achievement gaps have continued to unfold even as the public school system grows increasingly minority and schools are increasingly accountable for this achievement gap.

Theoretically, all students attend schools of equal quality, however there is segregation by courses when it comes to classes at the high end and low end of the curriculum --- advanced and gifted classes vs. remedial classes. This unequal educational opportunity continues to befall members of the African American and the Hispanic community. In terms of education, there is no meaningful integration of minority students into Advanced Placement and other rigorous courses of study, with a disproportionate number of African Americans and other minorities enrolled in remedial classes. As Table 1 (Student Enrollment and Achievement by Ethnicity) shows, White students comprise the majority of American students, the majority of students taking AP exams, and the majority of students earning doctoral degrees. However these same students account for the minority in the special education population, and White students also have a lower proportion of high school dropouts. While minority students make up 32.8% of the student population, they are over-represented in special education and under-represented in courses with more rigor. Student enrollment and achievement by ethnicity will be discussed in greater detail in Chapter 2.

Over 3 million students enter kindergarten each fall, and at the beginning of their educational careers, researchers forecast widely different futures for them. Whether they are White, African American, Hispanic, Native American, or Asian American will, to a large extent, predict their success in school, whether they go to college, and by extension,

**TABLE 1: Student Enrollment and Achievement by Ethnicity**

Race	% of Urban Populations* (1)	% of Students (2)	Special Education (3)	Event Dropouts 1999 (4)	AP Exams 1999 (5)	Combined SAT 1999 (6)	Doctoral Degrees 1997 (7)
Asian	5.8%	4.1%	N/A	5.0%	18.4%	1,058	15.0%
Black	34.0%	14.8%	26.0%	6.5%	4.7%	856	2.5%
Hispanic	48.4%	15.3%	18.0%	7.8%	6.0%	913	3.5%
White	11.7%	64.8%	11.0%	4.0%	65.9%	1,055	75.5%
Other	.2%	1.0%	N/A	N/A	5.1%	965	.4%

- (1) \*Average Student Enrollment Rates for Chicago, Houston, New York, and Los Angeles (Selected [Largest] Urban School Districts). Source: Respective websites - [http://www.cps.k12.il.us/AboutCPS/Statistical\\_Information/statistical\\_informtion.html](http://www.cps.k12.il.us/AboutCPS/Statistical_Information/statistical_informtion.html); <http://www.lausd.k12.ca.us/lausd/demographics>; <http://www.houstonisd.org/About/Pubs/AboutHSD/index.htm>
- (2) Percent of Children Ages 5-17; 2000 Population Projection; Source: U. S. Bureau of the Census
- (3) Considered retarded. Source: U.S. News and World Report, December 1993.
- (4) Source: National Center for Education Statistics: Dropout Rates in the United States 1999; retrieved March 20, 2002 from <http://nces.ed.gov/pubs2001/dropout/>
- (5, 6) Source: The College Board
- (7) Source: Science and Engineering Indicators, 1996; Women, Minorities, and Persons with Disabilities in Science and Engineering, 1996 and 1998 (percent of 12,061 doctoral degrees in science, math, engineering, and technology 1997-1998 for U.S. citizens and permanent residents only)

how much money they will earn as adults. Success in school, and later life, could very

well be a function of their race and ethnicity. If current trends hold, when these students are 17 and in the 12<sup>th</sup> grade, over 95 percent of those who are White will be in high school, reading at a 12<sup>th</sup> grade level, and easily reading their 12<sup>th</sup> grade textbooks; 25% of their African American classmates will have dropped out (D'Amico, 2001, p. 8). Most of those [African Americans] who are still in high school at grade 12 will be reading at only an eighth-grade level (Johnston and Viadero, 2000 p. 1). When they reach their early 20s, the White students will be nearly three times as likely as their Hispanic classmates and twice as likely as their African American classmates to have a college degree. These trends also will show up in students' employment and earnings potential, with more of the minority students heading toward low-paying jobs and periods of unemployment (Johnston and Viadero, 2000, p. 4).

This disparity in predicted educational and economic outcomes between America's minority and non-minority populations has become known as the "minority achievement gap" (D'Amico, 2001, p.3). This achievement gap can be seen in a wide range of educational success indicators, such as grades, test scores, dropout rates, college entrance rates, and college completion rates. No matter the demographics of a school district and in all socioeconomic groups, the achievement gap is evident. Lack of equal and comparable educational opportunities in the United States has led to the development of a permanent underclass. This is a problem that has existed for generations in the past, and traditionally and historically, this underclass has been disproportionately made up of members of the minority community. Because there are and were more poor Whites than other races, it is this proportion that reveals inequity. Years ago this underclass was able to fill jobs that required little or no education, but in this technologically advanced age, this is no longer possible. In a

time when the rich (educated) get richer and the poor (uneducated) get poorer, we must raise the bar and achievement for all students while closing achievement gaps.

This notion of an “achievement gap” is not a new concept. Lucas (2000) notes that as early as 1785, Thomas Jefferson saw it as an issue when he wrote his Notes on the State of Virginia. Lucas also points out that W.E.B. DuBois made its elimination a cornerstone of his agenda. And of course the history of the civil rights movement and concomitant court decisions highlight that the “gap” has long been a major political, economic, and educational focal point for this country (D’Amico, 2001, p. 3). Concentrated efforts to close the minority achievement gap also have a long history, but they accelerated in the early 1960’s in tandem with desegregation, equal opportunity, and compensatory spending legislation like Title I (Kahlenberg, 2000, p.2). Between 1970 and 1988, the black/white achievement gap was reduced significantly in reading, in mathematics, high school graduation, college attendance, and college completion rates. Since 1988, this trend has reversed, and the gap has been widening. In 1998, for example, African American students’ reading scores are 11 points lower than they were in 1988 while mathematics scores are 12 points worse than they were in 1988.

Likewise, the College Board (1999) sees the gap as a phenomenon that spans socio-economic levels. African Americans who are in the higher socio-economic levels have the same achievement gaps as African Americans who are in the lower socio-economic class. In her paper, “Some Daily Effects of White Privilege,” Dawn D. Bennett-Alexander Manglify, Esq. (1989, p. 8) asserts that, “White privilege is an invisible package of unearned assets . . . like an invisible weightless knapsack of special provisions, maps, passports, codebooks, visas, clothes, tools and blank checks.” Speaking of education, Manglify says that White privilege assures that

White parents can say, “I can be sure that my children will be given curricular materials that testify to the existence of their race. When I am told about our national heritage or about ‘civilization,’ I am shown that people of my color make it what it is. I can easily buy posters, picture books, greeting cards, dolls, toys, and children’s magazines featuring people of my race” (Manglify, 1989, p.8). This is not the case for minority parents, their children, and their education. As a reflector of society’s values, the media and educators have a tremendous impact on the shaping of personal and group identities. This factor continues to be a contributing cause to the achievement gap that affects African Americans across all socio-economic levels. At a recent conference sponsored by the North Carolina Commission on Raising Achievement and Closing Gaps, Dr. Robert E. Bridges, Chairman of the Commission, stated, “There exists a consistent disconnectedness, often hostile relationship between minority students and the schools” (Bridges, April 10, 2002, personal notes). Dr. Bridges further states that it is difficult for minority children to have a positive “self vision” because 85% of North Carolina teachers are White. Part of this “disconnectedness” and lack of a positive “self vision” can be attributed to the factors cited by Dr. Manglify. Similarly, achievement gaps seem to predict that minority students will be on the wrong side of America’s economic and quality-of-life gaps as well, in employment, salary, future earnings, and earnings potential. Because of their explicitly racial and ethnic nature, these predictions could very well show a disturbing trend of institutionalized discrimination.

The Advisory Commission on Raising Achievement and Closing Gaps in North Carolina has made several important findings and recommendations that will impact all North Carolina schools. Recommendation Ten specifies: That the State Board adopt a closing the gap

component to the accountability system that sets a universal standard and sets measures and incentives at the school district level (North Carolina Commission on Raising Achievement and Closing Gaps, 2001, p. 15). Recommendations Five, Seven, and Eight of the Commission's first report have a component that requires that "classroom teachers acquire the knowledge, skills, and dispositions needed to be successful in teaching a diverse population of student" (North Carolina Commission on Raising Achievement and Closing Gaps, 2001, pp. 12-13). Many states, including North Carolina, are now mandating that local school boards report their achievement levels by ethnic groups in order to be accountable for closing these gaps and document their attempts to close gaps. Finally, researchers looking at the achievement gap say we should stop investing in, encouraging, and mandating one-size-fits-all programs without seeing whether they will have an impact on specific needs and be effective in closing the achievement gap.

As long as the 'achievement gap' was confined to the major cities and minority neighborhoods, it was not viewed as an American problem of crisis proportions. Educators will have to learn about all cultures and increase our expectations for the educational achievement of all children if we are ever going to invent or improve the educational system into one that is a good fit for all students. Educators need to use educational programs that have a research base and proven results instead of using rhetoric to judge the validity of an educational program. Too many children have fallen victim to the tragedy of compassionate child-centered education and the agendas of high-priced consultants with costly solutions for the problems produced by the last wave of high-priced consultants (Ramsey, 1995, p. 1). Lots of money has been spent but attempts to close the achievement gap have been unsuccessful.

The test results continue to prove that high expenditures do not translate into high academic performance. Direct Instruction, a part of Project Follow Through (a 1984 comparison of teaching methodologies involving disadvantaged students over a four year period), was cited as the most effective program for academic enhancement. However, the effectiveness of Direct Instruction has been ignored in favor of Outcome Based Education. The mission of the school should be confined to academics and looking to what research tells us works. Schools should be accountable to society and produce what parents expect: children who graduate culturally literate and able to read, write, and calculate.

Reading instruction, using Direct Instruction, at Whiteville Primary School, will be the focus of this thesis. Whiteville Primary School, as the focal point of entry for the four other schools in the district, is in a unique position. The success, or failure, of its students will ultimately affect the academic achievements of the other schools in Whiteville City Schools. If these students fail to attain acceptable levels of reading achievement, their future educational opportunities will be limited.

Chapter 2 of this thesis will detail the extent and implications of reading as a major cause of the achievement gap in schools; explore the ongoing “reading wars” about the most effective method to teach reading (Direct Instruction v. whole language); define Direct Instruction; describe how Direct Instruction is used; and document how Direct Instruction for reading fostered enhanced reading achievement in all students. Chapter 3 will describe the need for a more effective reading program at Whiteville Primary School; how Direct Instruction was introduced to the staff; how the staff was trained in the use of Direct Instruction; and describe the implementation of Direct Instruction in Whiteville City Schools. Chapter 4 will detail the

results after implementation of Direct Instruction at Whiteville Primary School, using an ex post facto method of research that utilized existing data. This section will show overall increases and decreases in all student reading and mathematics achievement after implementation of Direct Instruction. Chapter 5 will draw conclusions on the effectiveness of Direct Instruction as a tool to close the achievement gap at Whiteville Primary School and other schools.

## CHAPTER 2: REVIEW OF THE RELEVANT RESEARCH LITERATURE

### Implications of The Minority Achievement Gap

Many political, economic, social, and technological forces are pressuring schools to restructure so that they can serve all students better. Still, many educators continue to seek the

single approach to “good teaching” that will improve all students’ achievement (Haberman, 1991, p. 2). They attribute urban students’ low academic achievement to their lack of ability, “culture,” and motivation to learn. The Commission on Chapter 1 (1992) explained the situation this way: Most Americans assume that the low achievement of poor and minority children is bound up in the children themselves or their families. “The children don’t try.” “They have no place to study. . . . Their parents don’t care.” “Their culture does not value education.” These and other excuses are regularly offered up to explain the achievement gap that separates poor and minority students from other young Americans (Commission on Chapter I, p. 3). These beliefs and excuses ignore the effects of instruction and curriculum. Indeed, a wealth of data show that an effective reading program will provide all children of whatever background the same educational skills for success. Regardless of socio-economic status, race, gender, or ethnicity, children can be taught what they need to learn using a theoretically sound program of instruction.

In a country where the minority population is steadily increasing, the student populations of many of our largest urban school districts (Chicago, Houston, New York, and Los Angeles) have become increasingly minority. The percentage of “minorities” makes them the “majority” in these districts as shown by Table 1 (above, p. 3). As the first two columns (‘Race’ and ‘% of Population’) of this table show, the average student enrollment for African Americans in these districts is 34.0%. In these largest urban districts, Hispanics comprise 48.4% of the student population. Combining these two ethnic groups reveals that 82.4% of the student population in the largest school districts are “minorities.” In these selected districts, only 11.7% of the student population is White. Although the “minority” population in our largest urban school districts

might be larger in proportion to other school districts, the implications are staggering. When any specific group of students is at risk for being underachievers and academically lag behind other segments of the population, there is a threat to the society that most Americans enjoy. As this technologically advanced information age advances, the implications become more critical. There are several extremely important, lifelong, and generational impacts of the achievement gap by race in our schools today, as the next sections describe.

#### Over-Representation in Special Education

The U. S. Bureau of the Census has projected that in 2000, 64.8% of the children ages 5-17 (school age) will be White; 15.3% of that population will be Hispanic; 15.8% will be African American; 4.1% will be Asian; and 1% will be classified as other (Table 1). In the 1980's, the U. S. Office for Civil Rights observed that "a minority student was found to be 2.3 times more likely than a white student to be classified EMR . . . [Educable Mentally Retarded] . . . 1.7 times as likely to be classified as TMR . . . [Trainable Mentally Retarded] . . . (US News and World Report, 1993). As Table 1, columns three and four ('% of Students' and 'Special Education' respectively) reveals, a disproportionate number of African Americans and Hispanics are placed in special education. These statistics indicate that while African Americans comprise 15.8% of total public school enrollment nationwide, they comprise 26.0% of all special education classifications (35.2% of EMR; 27.4% of TMR; 26.85 of BED [Behaviorally Emotionally Disabled]; 16.8% of LD

[Learning Disabled]). White children compose 64.8% of the total population, however only 11.0% of the special education population is White. 18.0% of the children enrolled in special education are Hispanic although they are 15.3% of the general student population. (Special education rates are not available for Asian and other students. It is noted that Speech-Impaired and Emotionally Disturbed rates are comparable for all ethnicities.)

It cannot be denied that Special Education has been and continues to be a lifesaver for many children with special needs. However, there is striking testimony over the years that many of these additional thousands of children are unnecessarily stigmatized because of a lack of supportive services in general education. Specifically, it has been alleged that the increase of students in special education is a means of manipulating national and state test scores. It is a common practice for some principals to place low-scoring students in special education programs in order to have them exempt from reading and mathematics examinations. This has “rail-roaded” African American children into Special Education in order to maintain a school’s meritorious national test scores (Agbenyega and Jiggetts, 1999, p. 600).

Without adequate kindergarten and early intervention resources to compensate, public school systems tend to be overwhelmed with children from very poor socio-economic environments; in turn, socio-economic status correlates to placement in special education programs. U. S. Department of Education data show that in over 80% of the states in the union, “Black [African American] students are over-represented in special education programs” (Education Week, 1986, p. 52) relative to their actual percentages in the aggregate student population in public schools. At the 2001 “North Carolina

Conference on Closing the Achievement Gap,” Dr. Richard Ramsey made the following points, underscoring precisely these same concerns:

- “Historically, special education has too often been a place to segregate minorities; Most pronounced is the dramatic overrepresentation of African American male children labeled “mentally retarded” compared to Whites and other minorities; Some minority children do need special education support, but far too often they receive low quality services and watered-down curriculum instead of effective support;
- Research suggests that minority students are less likely to be mainstreamed than similarly situated White students;
- Minority students are less likely than their White counterparts to receive counseling and psychological support when they first exhibit signs of emotional turmoil and often go without services once identified;
- Sixty-six percent of African American students with EBD [a diagnosis or label of emotionally/ behaviorally disturbed] had failing grades in comparison to 38% of White students with EBD and twice as many African American students with EBD exited school as a result of dropping out (58.2%) as opposed to graduating (27.4%); and
- The lack of early intervention and support correlates highly with the dropout rate and suspension or expulsion, and helps explain why minority school age children are over represented in the juvenile justice system” (Ramsey, 2001, pp. 1-3).

Placement in special education is also dependent upon IQ tests, which are culturally, socially, and racially biased. Critics have charged that these tests reflect White, middle

class values and experiences, which are not compatible with normative experiences of minority children living within a just and democratic society. The IQ test scores and results tend to undermine the very equality of opportunity and due process which court rulings and Congressional mandates have granted and affirmed as relief to minority children and children whose first languages are other than English (Agbenyega and Jiggetts, 1999, p. 620). Agbenyega and Jiggetts also assert that the “Placement decision-making based upon IQ tests presume that the tests are a fair sample of cultural, social, linguistic and cognitive styles based on a normal sampling of the population at large, and assume that children who do very well in them are intrinsically more competent relative to their peers whether the ‘do-wells’ have been prepared or coached at better resource-endowed schools for such tests or not” (Agbenyega and Jiggetts, 1999, p. 619). Results based upon the scorings of White attitudes and styles make the statistical interpretation of the results very suspect because there is no consideration given to diverse populations and cultural differences. For these reasons, there is a general consensus that IQ instruments are imperfect and patently unfair. It is also fair to say that minority children continue to be disproportionately placed into Special Education on the basis of these tests. The consequence of inappropriate referrals into Special Education has been the continued stigmatization of a large number of minority children and of a continuing perception that this population is a racial underclass despite of the vast successes and progress of African Americans in the nation. Irrational placements of minority children into Special Education lend credibility to the charge of systematic bias and racism, especially when real medical and psychologically diagnosed disabilities have been factored out of placement decision-

making. In other words, African American students are put into special education at disproportionately high rates, and once there, they do not receive appropriate services.

#### Under-Representation in Advanced Placement and Gifted Programs

A second manifestation of this achievement gap's consequences is the disproportionately low representation of minorities in advanced placement classes. In our largest cities, minority students (African American and Hispanic) comprise the majority (average of 82.4%) of students enrolled in public schools, although they comprise 10.7% of students enrolled in Advanced Placement classes as shown in columns two and six ('% of Population [largest urban school districts]' and 'AP Exams' respectively) of Table 1. Conversely, as Table 1 also shows, Asian American students represent 5.8% of total enrollment and 18.4% of those in Advanced Placement classes. (It is noted, however, that Asian American students have not been included in this minority total.)

Minority under-representation in Advanced Place programs is such a difficult problem because it is intertwined with so many other cultural and social problems associated with our nation's cities. Students arrive at inner-city high schools behind and less prepared than they should be. Lower performing schools, often located in minority neighborhoods, may not be able to offer AP programs. Economics and staffing needs are also a consideration. As Table 1 (above, p. 3) reveals, for 1999 African American students were 4.7% of all students tested in Advanced Placement examinations, compared to 65.9% for White students; 18.4% for Asian students; and 6.0% for Hispanic students. Ideally, percentages of ethnic and racial groups in the various academic pursuits would mirror that of the population in general, but this is not the case.

## High Stakes Testing

When it comes to 'high stakes' testing, or exit exams required for graduation and a valid diploma, minorities also experience failure disproportionately. Shelly Mack asserts that the claims brought against high-stakes tests are pretty similar in each case (Mack, 2000, p. 6). Although no court has invalidated a high stakes test since 1994, early challenges to this high school graduation requirement relied heavily on academic opportunities within school districts still under desegregation orders. Successful challenges to exit exams held that they would be valid when the school system no longer served students who had attended school under a dual system, in which the students in wealthier schools and neighborhoods received a better education. Dual school systems continue to exist stemming from a *de jure* segregation based on disparate busing schedules, racial stereotypes, higher suspension rates, and disproportionate termination of African American administrators and principals. In successful challenges to this graduation requirement, the affected exit exams also contained racially biased test questions. Based on race and/or economics, further considerations have been that minority students have been excluded from private school admission, where exit exams are not required for graduation. Mack (2000, p. 7) also notes: "Provisions for adequate remediation were not provided for minority students. The good news is that before 'high stakes' testing, at-risk minority students were easily ignored because no one really cared if they learned anything." As long as administrators and school boards were not accountable, the achievement gap was viewed as an individual (minority) problem, not an educational problem.

## Dropouts

One of the most serious complications of the “minority achievement gap” is the growing trend of dropouts. In general, the national dropout rate, measured for the 16 to 24 year old age group, has declined in the last 20 years. The dropout rate in this age group went from 16% in 1968 to 13% in 1989. In 1989, about 4 million persons in this age group were high school dropouts. In a report by the National Center for Education Statistics, U.S. Secretary of Education Richard W. Riley stated, “The dropout rate is holding at around five percent. This means that some 500,000 young people are still short-changing their lives and dropping out” (National Center for Education Statistics, 2001, p. 1). Differences and variability do exist among central city, suburban, and rural areas. Table 1 shows that differences exist as well among ethnic groups, with Hispanic youth having the highest national dropout rate (7.8%), African Americans the second highest (6.5%), and Whites the lowest (4.0%) during the 1987-1989 period. It is noted that over half of the foreign-born Hispanic youths who were counted as dropouts never enrolled in an American school. At present, 86% of persons aged 22 to 24 complete a high school diploma (either by graduating or completing an alternative certificate). By contrast, only 68% of persons aged 18 to 19 graduate “on schedule” from high school with a regular diploma (Howley and Huang, 2000, p. 19). More young adults are completing high school through alternative methods, such as the GED. Young adults living in families with incomes in the lowest 20 percent of all family incomes were five times as likely as their peers from families in the top 20 percent of the income distribution to drop out of high school.

Past research has shown that, compared with high school graduates, relatively more dropouts are unemployed and those dropouts who do succeed in finding work earn less money than high school graduates. High school dropouts are also more likely to receive public assistance than high school graduates. This increased reliance on public assistance is likely due, at least in part, to the fact that young women who drop out of school are more likely to have children at younger ages and more likely to be single parents (McMillen and Kaufman, 1994, p. 12). Secondary schools in today's society are faced with the challenge of increasing curricular rigor in order to strengthen the knowledge base of high school graduates, while at the same time increasing the proportion of all students who successfully complete high school and receive a diploma. Race-ethnicity, socioeconomic background, the ability to communicate in English, geographic region of residence, and the ability to read are all factors that mediate a student's decision to drop out of school.

### SAT Scores

The gap in performance on college entrance exams between Whites and ethnic groups widened in 1999, alarming education advocates who said American schools are failing to provide minority high school students with enough rigorous courses to prepare them for college (Groves and Cooper, 1999, p. 4). The College Board reports that this disparity is attributable to the sharp increase in the number of African Americans and Hispanics taking the tests. Nationally, average math scores were 511, down one point from 1998's 27-year high of 512, with the average verbal score remaining at 505 for the fourth straight year. SAT scores for Whites rose one point overall in 1999, while overall scores remained the same or declined for the largest ethnic groups. African Americans scored an average of four points lower in math,

422, in 1999 compared to 1998, while the verbal score of 434 remained the same. Hispanics also went down four points to 456 on math during this same period and remained the same on verbal with a score of 453. Table 1 reveals an achievement gap between African Americans (with a combined average SAT score of 856) and Hispanics (with a combined score of 913) when compared to combined average scores for Whites (1,055) and Asians (1,058).

Minority students have sued several universities maintaining that too much emphasis and weight is placed on SAT achievement tests, with the SAT required by 90% of the nation's four-year colleges and universities. Perhaps because SATs are easily scored and cost effective, university admissions committees use them as one dimensional qualifiers in the admission process. Nationally, one-third of the 1.22 million students in the Class of 1999 who took the test were minority students, up from 25% in 1989. Higher score ranges tend to include fewer female and minority students who may have comparable or superior other qualifications to non-minority students with higher scores, a relative disparity that increases in ranges approaching perfect 1600 scores (Boyce, 2000, p. 9). Tapia and Lanius (2000, p. 4) suggest that, "In addition to de-emphasizing SAT through broadening of criteria, we propose a 'threshold approach' to its use. In this approach, universities will establish a certain minimum score deemed critical for success at that university. Then all scores above the minimum score will be equal and will not be used to argue that one student is better than another." An over-dependence on SAT scores has denied many otherwise qualified minority students entry into colleges.

## College Completion

In 1995, over 32% of the entire college-aged population had completed a bachelor's degree in some field. Yet in that same year, only about 15% of college-aged African Americans and Hispanics had earned a degree. By contrast, 40% of Asian Americans had earned a bachelor's degree. In science and engineering at the bachelor's degree level, from 1975 to 1995, degrees earned by minorities rose from 6 to only 8 percent of all such degrees earned (NCES, 1999, p. 2). Given the huge growth in the minority population, actual rates have declined proportionally rather than increased. As Table 1 also shows, in 1998 African Americans received only 2.5% of all doctoral degrees (12,051) in science, math, engineering, and technology in the U. S., compared with 3.5% for Hispanics; 75.5% for Whites; and 15.0% for Asians (Tapia and Lanius, 2000, p. 4). As a group, Asian Americans are not under represented, but African Americans, Native Americans, Pacific Islanders, and Hispanics *as a group* are. If Asian Americans were included in the minority total, over 21% of PhDs are earned by minorities.

## The Future

For several decades the field of education has been strongly influenced by an orientation called constructivism--which includes so-called progressive, child-centered, holistic, and developmentally appropriate philosophies and practices (Kozloff, LaNunziata, Cowardin, and Bessellieu, 2000, p. 1). These constructivist principles legitimize and engender curricula in schools of education and inform the curricular and licensure standards of the major educational organizations. In addition, schools of education are cited for failing to produce teachers skilled at effective instruction in literacy and math (Ingersoll, 1999; National Center for Education

Statistics, 1999). Weak skills acquired in early grades result in “cumulative dysfluency” (Binder, 1996, p. 10). This “cumulative dysfluency” leads to a widening and deepening of the achievement gap, placement in special education, lack of rigor in courses, dropouts, and low earnings potential.

In spite of a lingering achievement gap between minorities and other races in education, we cannot merely give up because the consequences are too large. This under representation in equal educational opportunities is such a difficult problem because it is intertwined with so many other cultural and social problems associated with our country. The increasing participation of under represented minorities and an elimination of the achievement gap are issues critical to the health of this country. When such a large part of a population remains outside all educational and technological endeavors, no first-world nation can maintain the health of its economy or society. As minority populations continue to grow and approach the levels of the majority population, closing the minority achievement gap becomes more and more critical.

#### Reading as a Major Cause of the Achievement Gap

Institutions, ranging from the largest and most complex government agency, to large and small businesses, to the school systems, to the family, and most importantly, to the formal education of children --- all have a role to play in ensuring that literacy will be a reality for today’s students. Literacy has now become a business, a health, and a survival need, although it was once considered primarily a social issue. Daily reading is now a requirement for almost every job. At a local high school, the building had to be evacuated recently when one of the janitors incorrectly mixed two cleaning products together and caused noxious and toxic fumes to invade the building. He had failed to (or could not) read the directions on the

products. Personnel managers report that in many instances, employees have been terminated because they constantly bothered co-workers to help them read and understand policies and procedures on the job.

Although we are now in the age of technology, the three basics are still “Reading, Writing, and Arithmetic.” Reading has always been listed as the first basic of education, because when it comes to the basics, reading is a skill that must be mastered in order to facilitate mastery of other subjects. It has been discovered that failure to develop an adequate vocabulary, the sounds of language awareness, and understanding of print concepts during the preschool years puts some children at risk for long-term reading difficulties. With more mothers joining the work force and having less time to read to their children, it is critical that preschools foster language and literacy development in all children, especially those in lower-income families. Research indicates that all children, especially those at risk for reading difficulties, should have access to early childhood environments that promote language and literacy. Children at risk for reading difficulties include children with parents with histories of reading difficulties, children who acquire less knowledge and skills in preschool years, children who lack age-appropriate skills in literacy related cognitive linguistic processing, especially phonological, and children with a hearing impairment (deaf children need to be taught sign language).

Lack of adequate reading skills is one of the chief contributing factors in the achievement gap. Reading problems lead to poor achievement and success in school, lack of access to Advanced Placement and other rigorous classes, low SAT scores, limited access to college, and dire prospects for employment and earnings in the future. Students not taught to communicate, read, and reason skillfully in elementary school are unable later to learn other

subjects (math, science, history) that depend on skillful communication, reading, and reasoning. Therefore, these students enter high school many years below grade level, are a source of discipline problems, and are more likely to drop out of high school (Montgomery and Rossi, 1994, p. 43).

Despite the pivotal importance of reading skills for all children, “it appears that for about 60% of our nation’s children, learning to read is a much more formidable challenge, and for at least 20% to 30% of these youngsters, reading is one of the most difficult tasks they will have to master throughout their schooling. Why is this so unfortunate? Simply because if you do not learn to read and you live in America, you do not make it in life” (Lyon, 1998, p. 2).

According to the Report of the Charter G: Ad Hoc Special Committee on Persistent Reading Problems (1998, p. 3), a child has a persistent reading difficulty when, despite instruction, either word recognition or reading comprehension scores on a norm-referenced test are at least one year below grade level at the beginning of the third grade. Because of concern about the growing incidence of reading problems and learning disabilities in the general population, in 1985 the Health Research Extension Act gave the National Institute for Child Health and Human Development (NICHD) a new charge --- to improve the quality of reading research by conducting rigorous, long-term, prospective, longitudinal, and multidisciplinary studies (Lyon and Kameenui, 1998, p. 9). According to these authors, “providing children with the right literacy and reading experiences in the early years is likely to set the stage for successful reading and citizenship in later years.” Lyon and Kameenui (1998, pp. 2-4) found in their paper, “National Institute of Child Health and Human Development (NICHD) Research Supports the America Reads Challenge,” that:

“The NICHD research supports the following propositions about “learning to read” (early years from preschool to grade 3), and “reading to learn” (grades 4-12) for all children:

- Although the eyes make visual contact with the printed word, the critical work involves the sounds (phonemes) of language. Many NICHD studies show that a reader’s ability to remember, imitate, recall, manipulate (pull sounds apart and put them back together again), recode (switch between sound, visual, and semantic codes), and articulate sounds is essential to early reading.
- The ability to process sounds that are heard (called phonological processing) consistently differentiates good readers and poor readers. This ability is not dependent on intelligence, SES [socio-economic status], or parent education. Good phonological processing is necessary in order to decode and read new words quickly and accurately.
- In turn, the most reliable indicator of difficulties in comprehending what is read is the ability to read words quickly and accurately (called word recognition).
- Reading is indeed learned and therefore, must be taught, supported and sustained. Reading does not come naturally as does speech, and relies heavily on how we hear and manipulate sounds even before we see printed words.

- Reading the English language requires understanding the alphabetic writing system --- understanding that the alphabetic print must be converted into sounds and meaningful messages.
- Effective classroom instruction in the early grades by well prepared teachers is the most powerful method for preventing reading and learning problems. When teaching youngsters who have a difficult time learning to read, the research indicates that explicit, systematic instruction is most effective in teaching reading.

This instruction should:

- a. teach phonemic awareness (e.g. tell me the sounds in the word “sat”) at an early age (kindergarten);
- b. teach the common sound-spelling sounds in the words;
- c. teach children how to say the sounds in the words;
- d. use text that is composed of words that use sound-spelling correspondences that children have learned;
- e. Use interesting stories to develop vocabulary and language comprehension; and
- f. the most effective classroom method for early reading instruction involves a combination of explicit instruction in word recognition skills and reading comprehension strategies with opportunities to apply and practice these skills in literature” (Lyon and Kameenui, 1998, pp. 2-4).

While conducting studies with the 17 to 20 percent of children who have serious reading difficulties, the NICHD research program has learned the following:

- Substantial converging evidence supports the theory that significant reading problems are the result of a “phonological core deficit” in which readers have difficulty acquiring, retaining, manipulating, and recoding the phonemes or sounds of the English language.
- Without early identification and early interventions (before entry into the third grade), reading difficulties will be severe enough to hinder learning and the inability to enjoy reading will persist into adulthood unless intensive and specialized remediation programs are provided.
- The most effective instructional reading methods appear to involve a combination of explicit instruction in phonemic awareness, explicit instruction in sound-symbol relationships (phonics), and direct and integrated instruction in the reading of text and reading comprehension strategies. A balanced and complete teaching approach appears necessary for both children and adults with reading difficulties.
- Moreover, many children and adults who are not identified as “disabled” report that they do not read on a regular basis either to learn new information or for enjoyment. These individuals report that reading is difficult for them because they cannot read words quickly, which, in turn, limits their exposure to reading materials which they might otherwise learn from and enjoy (Lyon and Kameenui, 1998, pp. 2-4).

In summary, America Reads appears to complement and reinforce the research that has emerged from the NICHD program of research in strategic ways:

- Provides important insights into the nature of the reading process;
- Focuses attention on the urgency of an early and successful start to learning to read;
- Provides mechanisms to extend opportunities to read; and
- Instills in children and adults the importance and potential of reading (Lyon and Kameenui, 1998, p. 5).

When it comes to reading proficiency, adequate reading skills, and literacy, several agencies have adopted standards. Under the auspices of the National Center for Education Statistics (NCES), the National Assessment of Adult Literacy (NAAL) continues to set the standards and make the definition. The NAAL is a household survey of English-language literacy abilities of adults ages 16 and older in the United States. The NAAL defines literacy as: *Using printed and written information to function in society, to achieve one's goals, and to develop one's knowledge and potential* (National Assessment of Adult Literacy [NAAL], 1999, p. 3). According to the NAAL, the three literacy domains are as follows:

1. Prose Literacy - the knowledge and skills needed to understand and use information from texts such as editorials, news stories, poems, and fiction;
2. Document Literacy - the knowledge and skills needed to locate and use information contained in materials such as job applications, payroll forms, transportation schedules, maps, tables, and graphs; and

3. Quantitative Literacy - the knowledge and skills needed to apply arithmetic operations, either alone or sequentially, using numbers embedded in printed materials (NAAL, 1999, p. 3-4).

Literacy in the United States has been deemed a national health issue as adequate reading skills are necessary to survival. The aim of the National Adult Literacy Survey is to profile the English literacy of adults in the United States based on their performance across a wide array of tasks that reflect the types of materials and demands they encounter in their daily lives. While a survey will be conducted in 2002, the 1992 survey interviewed over 26,000 adults (including 13,600 individuals ages 16 and older in a random selection; 1,000 adults in a special study for states; and 1,100 inmates from 80 federal and state prisons; and other groups). Twenty-one to 23 percent, representing 40 to 44 million adults, demonstrated skills in the Level 1 (lowest); some 25 to 28 percent, representing 50 million adults nationwide, placed at Level 2; nearly 33 percent, representing 61 million adults, placed at Level 3; and eighteen to 21 percent, representing 34 to 40 million adults, performed at the highest points, Levels 4 and 5 (Kirsch, Jungeblut, Jenkins, and Kolstad, 2001, pp. 8-10). Kirsch, Jungeblut, Jenkins, and Kolstad also note that African American, American Indian/ Alaskan Native, Hispanic, and Asian/ Pacific Islander adults were more likely than White adults to perform in the lowest two literacy levels. Higher wages and greater lengths of employment were enjoyed by individuals demonstrating the higher levels of literacy. Lower literacy skills mean a lower quality of life and more limited employment opportunities. It is a well-known and sad fact that penal systems in many states are able to accurately predict their future prison populations based on elementary school reading scores across their respective states (Ramsey, 2001, p 3).

It is apparent that a nation with huge numbers of its population reading at a level less than that required to function effectively has fewer resources with which to meet its goals and objectives, whether these are social, political, civic, or economic. The United States is a country where the variety and volume of written information is growing, and individuals are expected to be able to read, understand, and use these materials. According to a report released on April 6, 2001 by the National Center for Education Statistics (p. 1), "Reading Gap Widens Between High- and Low-Performing Fourth-Grade Students," Asians/Pacific Islanders were the only racial/ethnic group to show an overall improvement in their average scores over the period 1992-2000. As in the past, White and Asian/Pacific Islander fourth-graders had higher average reading scores than their Black, Hispanic, and American Indian classmates.

The importance of literacy and the ability to read cannot be underestimated in our society. If students cannot make the transition from "learning to read" in the early grades to "reading to learn" in grades 4 - 12, they will be at a distinct disadvantage throughout their life. The inability to recognize words or comprehend a written passage at least one year below grade level at the beginning of third grade is a cause for concern. It is imperative that children be provided with the correct literacy and reading experiences in the early years in order to be successful readers and citizens in later years. For years, there have been debates over which method of reading instruction, phonics versus whole language, is most effective.

#### Effective Reading Instruction

Over the years, there have been major debates on the best methods to use for reading instruction. The most common and widely used methods for teaching reading are phonics and

whole language, but there are several areas that must be incorporated into any method of reading instruction in order to make it effective. According to a National Reading Panel Report (2001, pp. 18-20), “the five major areas of reading instruction are:

1. Phonemic Awareness: the ability to hear, identify, and manipulate individual sounds --- phonemes --- into spoken words. It must be understood that words are made up of speech sounds, or phonemes. Phonemic awareness is not phonics or phonological awareness. Phonemic awareness is the understanding that the sounds of spoken language work together to make words. It is the identification and manipulation of individual sounds into words. Phonemic awareness is necessary for children to benefit from phonics instruction because children who cannot hear and work with the phonemes of spoken words will have a difficult time learning how to relate these phonemes to the graphemes when they see them in written words. Phonemic awareness is also important because it improves children’s word reading and reading comprehension and it helps children learn to spell. It is most effective when instruction focuses on only one or two rather than several types of phoneme manipulation.
2. Phonics Instruction: teaches children the relationships between the letters (graphemes) of written language and the individual sounds (phonemes) of spoken language. It is also known as graphophonemic relationships, letter-sound associations, letter-sound correspondences, sound-symbol correspondences, and sound spellings. Phonics instruction leads to an understanding of the alphabetic principle — the systematic and predictable relationships between written letters and

spoken sounds. It significantly improves the children's word recognition, spelling, and reading comprehension. Phonics instruction is most effective when it begins in kindergarten or first grade.

3. Fluency Instruction: the ability to read a text accurately and quickly, including the ability to recognize words automatically and group words quickly to help them gain meaning from what they read. Fluency is important because it provides a bridge between word recognition and comprehension. Fluent readers concentrate on what the text means and not on decoding the words. They can recognize the words and comprehend at the same time, but only if they can decode first. Reading fluency can be developed by modeling fluent reading and by having students engage in repeated oral reading. The reading sounds natural, as if students are speaking. Monitoring student progress in reading fluency can be motivating to students, and fluency is important because it frees students to understand what they read.
4. Vocabulary Instruction: increases the words we must know to communicate effectively. It is important because beginning readers use their oral vocabulary to make sense of the words they see in print and readers must know what most of the words mean before they can understand what they are reading. Vocabulary can be developed indirectly (when students engage daily in oral language, listen to adults read to them, and read extensively on their own) and directly (when students are explicitly taught both individual words and word learning strategies). The meanings of most words are learned indirectly, through everyday experiences with oral and written language. The three levels of word knowledge are unknown, acquainted,

and established. There are four types of vocabulary: listening vocabulary (the words we need to know to understand what we hear), speaking vocabulary (the words we use when we speak), reading vocabulary (the words we need to know to understand what we read), and writing vocabulary (the words we use in writing).

5. Text Comprehension Instruction: taught through explicit instruction, through cooperative learning, and by helping readers use strategies flexibly and in combination. Comprehension is the reason for reading, and if readers can read the words but do not understand what they are reading, they are not really reading! They are simply ‘calling words’ (National Reading Panel, 2001, p. 18-20).”

### Direct Instruction

One form of reading instruction that is consistent with all of the scientific research on effective reading instruction is Direct Instruction. Direct Instruction (short for DISTAR, which originally stood for Direct Instruction System for Teaching Arithmetic and Reading), rich in structure, drilling, and content, is the opposite of today’s favored methods and contradicts the popular theories that are taught to new teachers in universities. According to Kozloff, LaNunziata, Cowardin, and Bessellieu (2000, p. 7),

“A guiding principle of Direct Instruction is that students can learn what the teacher can teach, and that if students aren’t learning, the teacher isn’t teaching. In other words, neither race, family background, social class, nor other factors are used to explain low achievement.”

“However, there are misconceptions about Direct Instruction that lead

some persons to believe that Direct Instruction is not developmentally appropriate. Yet, Direct Instruction has always been predicated on the certainty that one cannot and should not teach children subject matter, and should not teach children in learning environments, for which children are developmentally unprepared” (Kozloff and Bessellieu, 2000, p. 1).

Kozloff and Bessellieu conclude that to ignore this rule means that children struggle unnecessarily, fail to learn, develop low self-esteem and low self-expectations, and soon find school and subject matter aversive.

While the name sounds quite simple and unambiguous, what exactly is *Direct Instruction* and how does it foster reading and academic achievement? Direct Instruction was developed over 30 years ago by the work of Siegfried Engelmann with disadvantaged children. Founder Siegfried (Ziggy) Engelmann started with a behaviorist idea ---that the effectiveness of teaching strategy can be measured by changes (or lack of changes) in behavior. In his view, when kids fail to learn, it has nothing to do with brain wiring. Rather, the instruction was unclear or poorly organized. Engelmann’s goal was to design a program that was clear enough to teach any beginning learner (Duffrin, 1996, p. 6). Duffrin states that in designing a reading program for disadvantaged preschoolers, “The premise is that the underdeveloped language skills many poor children bring to school can make learning to read difficult---if not impossible” (p. 7). Direct Instruction has evolved over this time into curricula for teaching elementary through secondary language, reading, math, higher-order thinking (reasoning), writing, science, social studies, and legal concepts. Complete curricula in reading and math have been provided by Direct Instruction, or DI. According to Kozloff, LaNunziata, and Cowardin (1999, p. 5), the

teaching methods and materials of DI have been rigorously tested in numerous experiments and field trials, and this distinguishes Direct Instruction from other curricula and textbooks, which typically receive no testing before they are sold to schools and “tested” on children. In initial field testing of Direct Instruction, errors, such as the sequencing of skills, were discovered and corrected. Thirty years of both large scale and smaller scale research shows that Direct Instruction---one type of focused instruction---fosters rapid and reliable achievement in students regardless of ethnicity, race, family background, or socioeconomic status (Bessellieu, Kozloff, and Rice, Undated, p. 1).

According to Kozloff, LaNunziata, and Cowardin (1999, p. 5-6): “Moreover, Direct Instruction was compared with 12 other models in the largest education evaluation ever conducted, called Follow Through (1967-1995; one billion dollars; 75,000 children in 180 sites), sponsored by the U. S. Department of Education and conducted by the Stanford Research Institute (Bock, Stebbins, and Proper, 1977; Watkins, 1997). Other models included the Behavior Analysis Model, the Florida Parent Education Model, and several models (which would be considered constructivist) that were language-oriented, student-centered, and cognitive-developmental--including the High/Scope cognitive curriculum, the Bank Street College Model, Open Education, Responsive Education, and the Tucson Early Education Model. Scores on the Metropolitan Achievement Test, the Coopersmith Self-Esteem Inventory, and the Intellectual Achievement Responsibility Scale, showed that Direct Instruction was superior both to controls schools and to every other model in fostering basic reading and math skills, higher-order cognitive-conceptual skills, and even self esteem” (see also Adams & Engelmann, 1996). Follow-up studies on students (predominantly African American and

Hispanic) taught reading and math with Direct Instruction have found that at the end of ninth grade, these students were still one year ahead in reading and 7 months ahead in math relative to non-Direct Instruction students. “Direct Instruction students have higher rates of graduating high school on time, lower rates of dropping out, and higher rates of applying and being accepted into college (Meyer, Gersten, and Gutkin, 1983).”

Kameenui and Carnine stress that in Direct Instruction, concepts are not taught in isolation from each other because instruction involves strategic integration within and across subjects. Lessons are taught in increments of 10 to 45 minutes, and they are arranged logically so that students first learn what they need to grasp later concepts. Lessons are typically taught in small groups and formatted so that teacher know what to say to provide faultless communication and know what to ask to encourage students to reveal their understanding or difficulty with a concept. This strategy, which helps students get concepts (e.g., a balanced equation), is at first explicit, or conspicuous, so students learn to use the strategy themselves. In other words, Direct Instruction teaches students to think skillfully. In reading, lessons are followed by independent and small group activity such as writing in order to give students practice and generalize skills to new materials. Gradually, instruction moves from a teacher-guided to a more student-guided format. This is called mediated scaffolding (Kameenui and Carnine, 1998, p. 9). The move to less scaffolding is achieved by teaching students problem-solving strategies, fading assistance, and introducing more complex contexts--to help students distinguish essential and inessential details.

Direct Instruction involves all students being actively engaged all the time, either listening and watching other students or the teacher, or responding to the teacher or to other students

individually or as a choral group. In the lower grades, eight to ten students typically sit in a semi-circle around the teacher with each student able to see the book the teacher is using. In the upper grades, teachers may work with as many as 20 students or more. Direct Instruction, by providing instruction tailored to identified strengths and needs of the students as determined by short placement exams, confronts head-on real differences in students' needs and the right of all students to achieve. Features of a Direct Instruction lesson are:

- the teacher is an instructional leader,
- the teacher closely supervises and coaches students during lessons and when working alone or in small groups,
- the lessons are quick-paced, and
- the absolute outcome of instruction on any lesson must be mastery.

Mastery occurs when lessons have the following phases: attention and focus; orientation or preparation; modeling or demonstration by the teacher; lead or guided practice; a test or independent practice; feedback in a timely manner and genuine praise; error correction (because uncorrected errors will be learned); additional material (comparisons using *different, alike, similar, etc.*); and future lessons to teach students to discriminate types of problems and to select relevant strategies.

In general, the Direct Instruction curriculum transforms knowledge systems (e.g., language arts, science, math) into carefully crafted sequences for lessons, which are built around the principle of faultless (logically clear) communication. These lessons are taught in tight-knit classroom learning communities in which children acquire essential concepts and propositions

and the strategies and operations for using them with meaningful materials. The mission of Direct Instruction is largely accomplished when curricula are properly implemented

### CHAPTER 3: METHODOLOGY

This thesis presents findings from research and the collection of data showing an achievement gap between the students in Whiteville City Schools upon entry into the third grade. Due to the nature of the data available for this study, the thesis focused on race and/or ethnic background as the basis for citing the differences in African American and White students' achievement. Employing an *ex post facto* method of research, based upon a comparison of available data on the *Third Grade Pre-Test* before and after the implementation of Direct Instruction, data were collected and analyzed for this thesis. An *ex post facto* (after the fact) method of research and study utilizes pre-existing data, specifically results from the yearly *Third Grade Pre-Test*. The research objectives were established through a literature review of research articles and other sources that attempted to define the achievement gap and instructional curricula that target and relieve the achievement gap, specifically Direct Instruction, as noted and discussed in chapter 2.

It should be made clear than neither a “control group” or an “experimental group” were constructed. More specifically, I compared the achievement gap data for all students (overall and within subgroups) before the implementation of Direct Instruction with the achievement gap data for all students after the implementation of Direct Instruction. The benchmark measurement is the overall gains or losses in *Third Grade Pre-Test* scores from one year to the next, with close scrutiny of the gains or losses in minority achievement.

Data were collected for the past four (4) school years (1998-1999 to 2001-2002) on the proficiency results of the *Third Grade Pre-Test* for beginning third graders at Edgewood Elementary School. These students have just entered Edgewood, and their second grade teachers from Whiteville Primary come over to Edgewood to administer the tests. The *Third*

*Grade Pre-Test* determines the percentage of third graders (at the beginning of the school year) proficient at Levels 3 and 4 in reading and mathematics. In order to determine the extent of an achievement gap, if any, the data were broken down by ethnic group and sex; i.e., African American females, African American males, White females, and White males. As available, data were also collected from the State of North Carolina and Columbus County Schools in order to determine Whiteville City School's proficiency levels overall in comparison to the state and other schools in Columbus County.

Whiteville Primary School, Pre-Kindergarten to Grade 2, is the point of entry into Whiteville City Schools, which is a school system for the children of Whiteville, North Carolina. There are two separate and distinct school systems within Columbus County: Columbus County Schools and Whiteville City Schools. Whiteville City Schools is composed of Whiteville Primary School; Edgewood Elementary School (Grade 3 to Grade 5); Central Middle School (Grade 6 to Grade 8); North Whiteville Academy (Alternative School, serving Grade 6 to Grade 12); and Whiteville High School (Grade 9 to Grade 12). There are approximately 3,000 students in the Whiteville City Schools, and of these 3,000 students, approximately 45% are White, 45% are African American, and 10% other (Hispanic, Biracial, East Indian, Asian, American Indian, etc.). Historically, Whiteville City Schools have been *perceived* to be better than the county schools, with many county students applying for and admitted to Whiteville City Schools.

As the point of entry for Whiteville students, Whiteville Primary School serves as the focal point for Whiteville City Schools. According to the Whiteville Primary School web page, the philosophy is: "We, the staff of Whiteville Primary, believe it is our responsibility to be

concerned with each child's mental, physical, social, and emotional growth. Our purpose is to provide maximum opportunities for each child to achieve to the highest of his/her ability. We should create the best possible learning environment one that is consistent with currently accepted education policies based on reliable research"

(Whiteville Primary School, 2002). The staff is also committed to provide for the development of self-esteem, self-discipline, and positive interpersonal relationships. The web page states, "Further, we are committed to uphold our philosophy, beliefs and objectives as an integral part of our school's program and our community." While there is not a Gateway or state mandated End of Grade test at the primary school, students leaving Whiteville Primary School should be reading on grade level or the stage is already set for academic failure. Providing children with the right literacy and reading experiences in the early years is likely to set the stage for successful reading and citizenship in later years (Lyon and Kameenui, undated, p. 12). If the children of Whiteville, NC are to be successful and positive members of the community, by the time they leave Whiteville Primary School, students should be making the transition from "learning to read" to "reading to learn."

#### Implementing Direct Instruction at Whiteville Primary School

The long-time principal at Whiteville Primary School retired at the end of the 1999-2000 school year. Mrs. Hope Kennedy High assumed the leadership role at this time. Mrs. High, with over 15 years of experience as an elementary teacher in the Columbus County school system, was a Principal Fellow at the University of North Carolina at Wilmington, Wilmington, NC. Following her graduation with a Master of School Administration degree and her principal licensure, Mrs. High became an Assistant Principal at Ogden Elementary School in

New Hanover County, NC. As the new principal of Whiteville Primary School in the fall of 2000, Mrs. High was concerned about the underachievement of her students as compared to other students in the state and in Columbus County. According to Mrs. High, she was doubly concerned about the racial achievement gap at her school (High, 2002).

While employed as an administrator in New Hanover county, Mrs. High was impressed with the reading proficiency demonstrated by students who were taught reading using Direct Instruction. “In a graduate school class under Dr. Martin Kozloff at the University of North Carolina at Wilmington, I was the only one who had not heard about Direct Instruction. When I first observed the process, I was not particularly impressed. The teacher memorized script and the robotics turned me off. I was perplexed about how and why it was good. Intellectually, it didn’t add up” (High, personal communication, 2002). However, starting in July 1998, while at Ogden Elementary School, Mrs. High had firsthand knowledge of Direct Instruction’s effectiveness in increasing reading proficiency in all students, including minorities. At a time when public schools are increasingly held accountable for students’ achievement and for narrowing, closing, and preventing achievement gaps between minority/ disadvantaged and white/advantaged students, Direct Instruction provides highly effective programs whose implementation fosters beneficial change in students’ engagement and achievement, in teachers’ skill at instruction and evaluation, and in the social organizations of schools (e.g., strong shared mission and teacher learning) (Kozloff, LaNunziata, Cowardin, and Bessellieu, 2000, p. 1). Faced with students’ low reading levels, an overall achievement gap with other students in the state, and a racial achievement gap, Mrs. High knew her students needed a program to help

with decoding and comprehension. She decided to implement Direct Instruction for reading in Kindergarten through grade 2.

Mrs. High faced several serious challenges in her endeavor to implement Direct Instruction at Whiteville Primary School. First, she had to sell the program to the superintendent of schools, the local Board of Education, the teachers, and the parents. She also had to find the money to pay for the program. Dr. Anthony Parker, former superintendent of Whiteville City Schools, and the board were quickly and extremely supportive of the program. Mrs. High's next hurdle was the teachers, and this proved to be the most taxing of all. As a new principal starting July 1, 2000, she had to sell the program to teachers who were already fearful and uncertain under a new principal. The teachers did not know about, and/or had not been trained in, Direct Instruction. Starting with a voluntary trip in September 2000, twenty (20) teachers visited four diverse schools in New Hanover County to observe Direct Instruction in various settings in order to see the application. Mrs. High also had a video that was made available to other staff members. Most of the staff had the same initial reaction as Mrs. High: not impressed; memorized script and robotics were a turn off; and perplexed as to how and why it worked.

During October and November 2000, teachers had additional exposure to Direct Instruction, and all teachers (including Pre-kindergarten and exceptional children's teacher) participated in the free training. During this time, teachers observed and demonstrated Direct Instruction with each other. At the end of this period, teachers returned to Mrs. High a signed statement of interest indicating their choice of "will" participate or "prefer not" to participate. In order to pay for the program, Mrs. High used textbook funds taken from teacher instructional supplies. Instead of the usual \$700, each teacher got a Direct Instruction kit, and the program

was ready to go in January 2001, which was a good time to start, as January coincided with the time of mid-year conferences. Parents were introduced to Direct Instruction during a presentation in the media center. The parents of students reading below grade level on the K-2 literacy assessment opted for DI as a means to help their children increase proficiency and move to the next grade level.

Under the leadership of Hope Kennedy High, Principal, and a total of thirty-one (31) teachers (11 Kindergarten, 10 First Grade, and 10 Second Grade classes), Direct Instruction began at Whiteville Primary School in January 2001. “*Language for Learning*” was used in the Kindergarten classes, and “*Reading Mastery*” was used in first and second grades. As indicated by Table 2: Third Grade Pre-Test Data (Percent Proficient at Levels 3 and 4), student achievement overall in reading was 60% proficient at levels 3 and 4. Targeted for the Direct Instruction was that 40% of students not proficient, or approximately ten students per class. Teachers were given the option of using Direct Instruction for the entire class, with some students exposed to “*Language for Learning*,” “*Reading Mastery*,” and other types of reading instruction.

Direct Instruction was implemented in January, 2001, and examination of the results of the 2001-2002 *Third Grade Pre-Test* (administered in August 2001) by ethnic group and sex can begin to indicate if Direct Instruction is effective in closing or narrowing an achievement gap that existed at Whiteville Primary School before the implementation of Direct Instruction. If there are gains on the Third Grade Pre-Test after

**TABLE 2: Third Grade Pre-Test Data (Percent Proficient at Levels 3 and 4)**

	<b>North Carolina (NC)</b>	<b>Columbus County Schools (CCS)</b>	<b>Whiteville City Schools (WCS)</b>	<b>WCS compared with NC</b>	<b>WCS compared with CCS</b>
<b>READING</b>					
<b>1998-99</b>	<b>67.4%</b>	<b>N/A</b>	<b>49.8%</b>	<b>-17.6%</b>	<b>N/A</b>
<b>1999-00</b>	<b>69.8%</b>	<b>62.7%</b>	<b>56.9%</b>	<b>-12.9%</b>	<b>-5.8%</b>
<b>2000-01</b>	<b>71.1%</b>	<b>66.1%</b>	<b>66.3%</b>	<b>-4.8%</b>	<b>.2%</b>
<b>2001-02</b>	<b>N/A</b>	<b>63.1%</b>	<b>75.1%</b>	<b>N/A</b>	<b>12.0%</b>
<b>MATH</b>					
<b>1998-99</b>	<b>74.7%</b>	<b>N/A</b>	<b>60.5%</b>	<b>-14.2%</b>	<b>N/A</b>
<b>1999-00</b>	<b>76.9%</b>	<b>76.3%</b>	<b>60.4%</b>	<b>-16.5%</b>	<b>-15.9%</b>
<b>2000-01</b>	<b>79.2%</b>	<b>69.5%</b>	<b>67.6%</b>	<b>-11.6%</b>	<b>-1.9%</b>
<b>2001-02</b>	<b>N/A</b>	<b>72.1%</b>	<b>80.8%</b>	<b>N/A</b>	<b>8.7%</b>

N/A: Not Available

**Note:** Third Grade Pre-Test is administered to third graders in the fall of the school year; based on 204 students at Whiteville Primary School for 2001-02.

**Source:** Columbus County Schools; Whiteville Primary School (Hope Kennedy High)

implementation in January, 2001 and a narrowing of the minority achievement gap, with no other change in variables, it can be assumed that Direct Instruction is effective in closing the achievement gap in Whiteville City Schools.

This chapter described the research objectives of this thesis and the implications of an ex post facto experiment, with its use of pre-existing data to simulate a deliberately constructed experimental condition. This chapter also fully profiled the achievement gap concerns of Whiteville City Schools, how these gaps lowered the overall proficiency levels in comparison to other schools, the problems associated with implementing Direct Instruction, and the process of implementing Direct Instruction at Whiteville Primary School.

The resulting data from the processes described in this chapter will be presented in tables and charts in the following chapter. In the Results chapter, I will also highlight noticeable trends and specific data. In particular, I will point out key data regarding African American students and White students in order to determine if the achievement gap has decreased after the implementation of Direct Instruction. In the next chapter, these results and findings will be analyzed and discussed.

## CHAPTER 4: RESULTS

### Before Direct Instruction

During the first month of school each school year, third graders are administered the *Third Grade Pre-Test* in mathematics and reading. This is a precursor to the third grade *End-of-Grade Test*. Data for this pre-test since 1998 reveal that there is an achievement gap between the students of Whiteville Primary School (with these students at a deficit), Columbus County Schools, and the average North Carolina student. On Table 2: Third Grade Pre-Test Data (Percent Proficient at Levels 3 and 4, data for North Carolina (NC), Columbus County Schools (CCS), and Whiteville City Schools (WCS) reveal:

- For the 1998-1999 school year (before the implementation of Direct Instruction), the percent proficient in reading achievement in North Carolina, as revealed by Third-Grade Pretest Data, is 67.4% for the state and 49.8% for Whiteville Primary School. Data for Columbus County Schools were not available.
- For the 1999-2000 school year (before the implementation of Direct Instruction), the state average proficiency rate in reading is 69.8%; Columbus County Schools rate is 62.7%; and Whiteville Primary School is 56.9%.
- For the 2000-2001 school year, the *Third Grade Pre-Test* proficiency rate had increased 9.4%, from 56.95 to 66.3%.

Although the proficiency rate is increasing, it is still lower than state and other local school averages as revealed by Table 2. The 1998-1999 data in column five ('WCS compared

with NC') show that the Whiteville City School district is 17.6% below the state average. Data were not available for Columbus County Schools for this period. For 1999-2000, again the Whiteville City School district is at a deficit: 12.9% below the state average and 5.8% below Columbus County Schools. Data for the 2000-2001 school year reveal that an increase occurred in Whiteville City Schools' third graders. These results compare more favorably to the state reading proficiency level of 71.1% and surpassed the 63.1% level of Columbus County Schools, with Whiteville Primary School still having a deficit of 4.8% and .2% respectively.

Overall, proficiency at Levels 3 and 4 for Whiteville City Schools' third graders in reading and mathematics is lower than that of other third graders in the state of North Carolina and other third graders in Columbus County. Gains have been noticed after the implementation of Direct Instruction at Whiteville Primary School in January 2001.

Like schools throughout the country, at Whiteville Primary there is an achievement gap by race. With over 45% of the school population minority, there are profound implications.

Table 3: Third Grade Pre-Test Data with Achievement Gaps reveals that:

- For 1998-1999, further analyses of the reading data reveal that while White males are 71.4% proficient and White females are 64.8% proficient, African American males are 25.4% proficient and African American females are 40.8% proficient. The achievement gap between White males and African American males is 46.0% in reading.

- In the 1999-2000 school year, White females are 74.6% proficient, White males are 65.5% proficient, African American females are 50.0% proficient, and African American males remain the lowest at a proficiency

**TABLE 3: Third Grade Pre-Test Data with Achievement Gaps  
(Whiteville Primary School)**

<b>READING</b>	<b>WCS</b>	<b>BF</b>	<b>BM</b>	<b>WF</b>	<b>WM</b>	<b>Achievement Gap</b>	<b>Between</b>
<b>1998-99</b>	<b>49.8%</b>	<b>40.8%</b>	<b>25.4%</b>	<b>64.8%</b>	<b>71.4%</b>	<b>46.0%</b>	<b>White Males &amp; Black Males</b>
<b>1999-00</b>	<b>56.9%</b>	<b>50.0%</b>	<b>34.5%</b>	<b>74.6%</b>	<b>65.5%</b>	<b>40.1%</b>	<b>White Females &amp; Black Males</b>
<b>2000-01</b>	<b>66.3%</b>	<b>61.7%</b>	<b>40.4%</b>	<b>88.9%</b>	<b>68.0%</b>	<b>48.5%</b>	<b>White Females &amp; Black Males</b>
<b>2001-02**</b>	<b>75.1%</b>	<b>76.6%</b>	<b>63.6%</b>	<b>81.8%</b>	<b>80.0%</b>	<b>18.2%</b>	<b>White Females &amp; Black Males</b>
<b>MATH</b>							
<b>1998-99</b>	<b>60.5%</b>	<b>53.7%</b>	<b>37.3%</b>	<b>85.5%</b>	<b>71.4%</b>	<b>48.2%</b>	<b>White Females &amp; Black Males</b>
<b>1999-01</b>	<b>60.4%</b>	<b>47.7%</b>	<b>39.7%</b>	<b>76.3%</b>	<b>74.5%</b>	<b>36.6%</b>	<b>White Females &amp; Black Males</b>
<b>2000-01</b>	<b>67.6%</b>	<b>55.3%</b>	<b>46.2%</b>	<b>87.0%</b>	<b>80.0%</b>	<b>40.8%</b>	<b>White Females &amp; Black Males</b>

<b>2001-02**</b>	<b>80.8%</b>	<b>66.0%</b>	<b>81.8%</b>	<b>87.3%</b>	<b>90.0%</b>	<b>24.0%</b>	<b>White Males &amp; Black Females</b>
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\*\* After implementation and use of **Direct Instruction** for 5 months (January 2001 - May 2001)

**Source:** Whiteville Primary School; based on a total of 204 students at Whiteville Primary School. rate of 34.5%. The gap between White females and African American males in Whiteville City Schools is 40.1%.

- Achievement gap statistics reveal that reading proficiency for African American females increased from 50.0% to 61.7%, or 11.7% overall during the 2000-2001 school year. For African American males, the increase was 5.9%, from 34.5% to 40.4%. However the achievement gap between White females and African American males increased to 48.5% (from 40.1% the previous year), as the proficiency rate for White females increased 14.3% or from 74.6% up to 88.9%. Although improvements are noted with the African American students, they are not keeping pace with the increased proficiency of White students.

The proficiency levels as cited were not satisfactory to the administration at Whiteville City Schools, and a major effort was undertaken to close the minority achievement gap within the school system and to close the deficit between Whiteville City Schools and the rest of the state.

After Implementation of Direct Instruction

After five months of using Direct Instruction, the 2001-2002 *Third-Grade Pre-Test* was administered in August, 2001. Results indicate an overall increase in proficiency on this test for all students in reading (Table 2), but African American males increased 23.2% (from 40.4% to 63.6%) and African American females had an increase of 14.9% (from 61.7% to 76.6%) as indicated by Table 3.

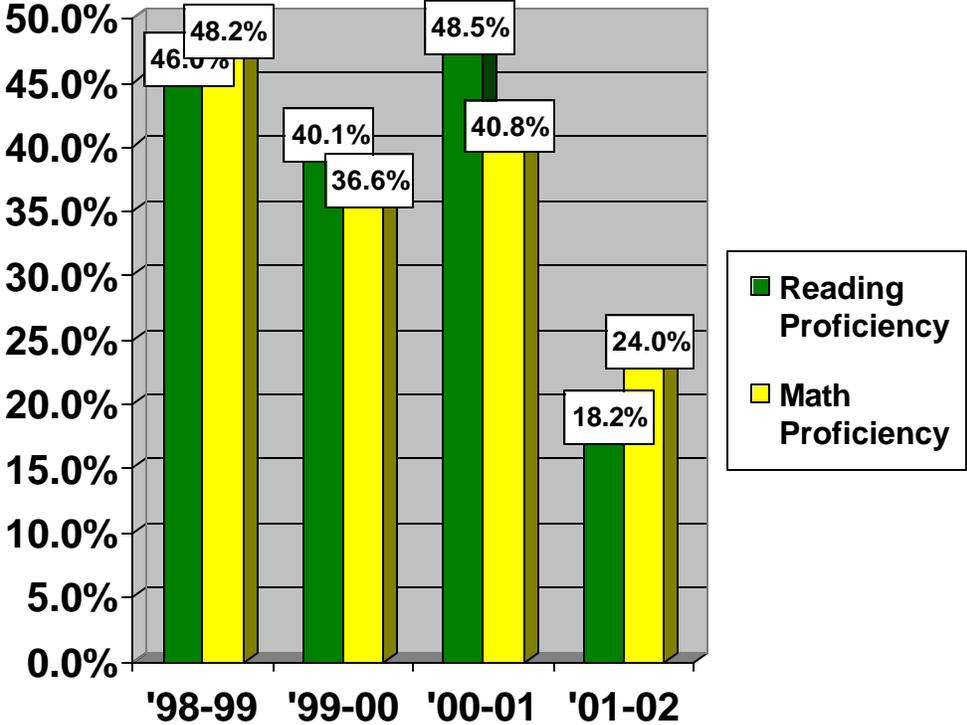
- For the 2001-2002 school year (after the implementation of Direct Instruction), the North Carolina *End of Grade 3 Pre-Test* data reveal that Whiteville Primary School's proficiency level is 75.1% compared to 63.1% for Columbus County Schools. Table 2 reveals that this is an increase of 8.8% over the previous year for Whiteville Primary School. Data for the state of North Carolina were unavailable.
- Reading achievement gap data reveal the largest achievement gap is between White females and African American males for 2001-2002 as shown by Table 3. This gap is down 30.3% from the previous year to only 18.2% from 48.5%. Table 3 shows that African American males were proficient at 63.6% while White females were 81.8% proficient, with African American females proficient at 76.6% and White males proficient at 80.0%. These individual group increases may be attributed to the implementation of Direct Instruction at Whiteville Primary School, as all other elements of instruction remained the same.

It is noted that students targeted for Direct Instruction were the 40% not proficient at Levels 3 and 4. As previous literature on Direct Instruction has indicated, there is an overall

increase in achievement for all students with outstanding increases for African American students. The trend, after the implementation of Direct Instruction at Whiteville Primary School, has been an increase in academic achievement and a decrease in the racial achievement gap at Whiteville Primary School. Chart 1: Decreases in the Achievement Gap (After Implementation of Direct Instruction at Whiteville Primary School) shows the greatest decrease (30.3%) in the achievement gap for reading from 48.5% in 2000-2001 to 18.2% in 2001-2002. The greatest gap this year occurred between White females and

**Chart 1: Decreases in the achievement gap after implementation of Direct Instruction at Whiteville Primary School in January 2001**

# Decreases in the Achievement Gap (After Implementation of DI at WPS)



African American males. This decrease in the gap is attributed to the implementation of Direct Instruction in January 2001.

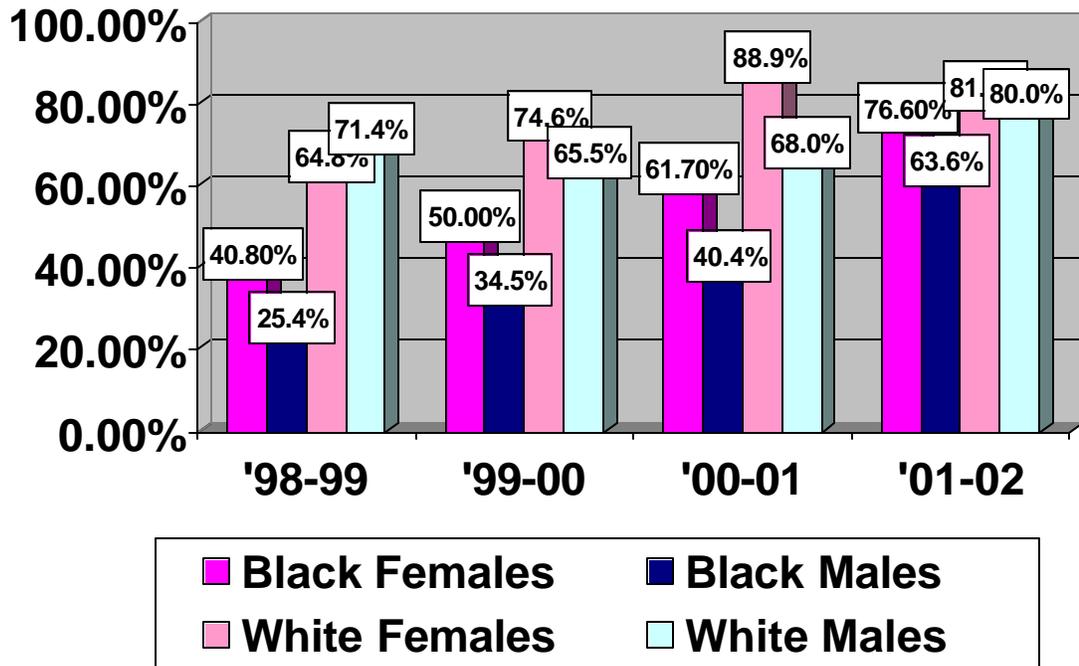
Chart 2: Reading Achievement Gaps at Whiteville Primary School illustrates the magnitude of racial achievement gap in reading from 1998 to 2002, before and after the implementation of Direct Instruction. Before the implementation of Direct Instruction, African American males (40.4% proficient) had the lowest reading achievement, followed by African American females (61.7% proficient), White males (68.0% proficient), and White females (88.9% proficient). As shown by data for the 2001-2002 school year, a narrowing of the achievement gap occurred with African American males 63.6% proficient (up 13.2%); African American females 76.5% proficient (up 15.9%); White males 80.0% proficient (up 12.0%); and White females 81.8% proficient (down 17.1%). The data show a close in the achievement gap from the 2000-2001 school year, with the 2001-2002 results reflecting the use of Direct Instruction at Whiteville Primary School for five months (January 2001 - May 2001). These results appear to be attributable to Direct Instruction as no other variable changed.

Since the implementation of Direct Instruction in January 2001, there has been a narrowing of the achievement gap as indicated by Chart 3: Decreases in the Achievement Gap after the implementation of Direct Instruction. In reading the proficiency level ranges from a low of 63.6% (African American males) to a high of 81.8% (White females) for the 2001-2002 school year. The achievement gap for this year is 18.2%, which is the lowest it has been since data were collected and analyzed for racial and gender differences in achievement.

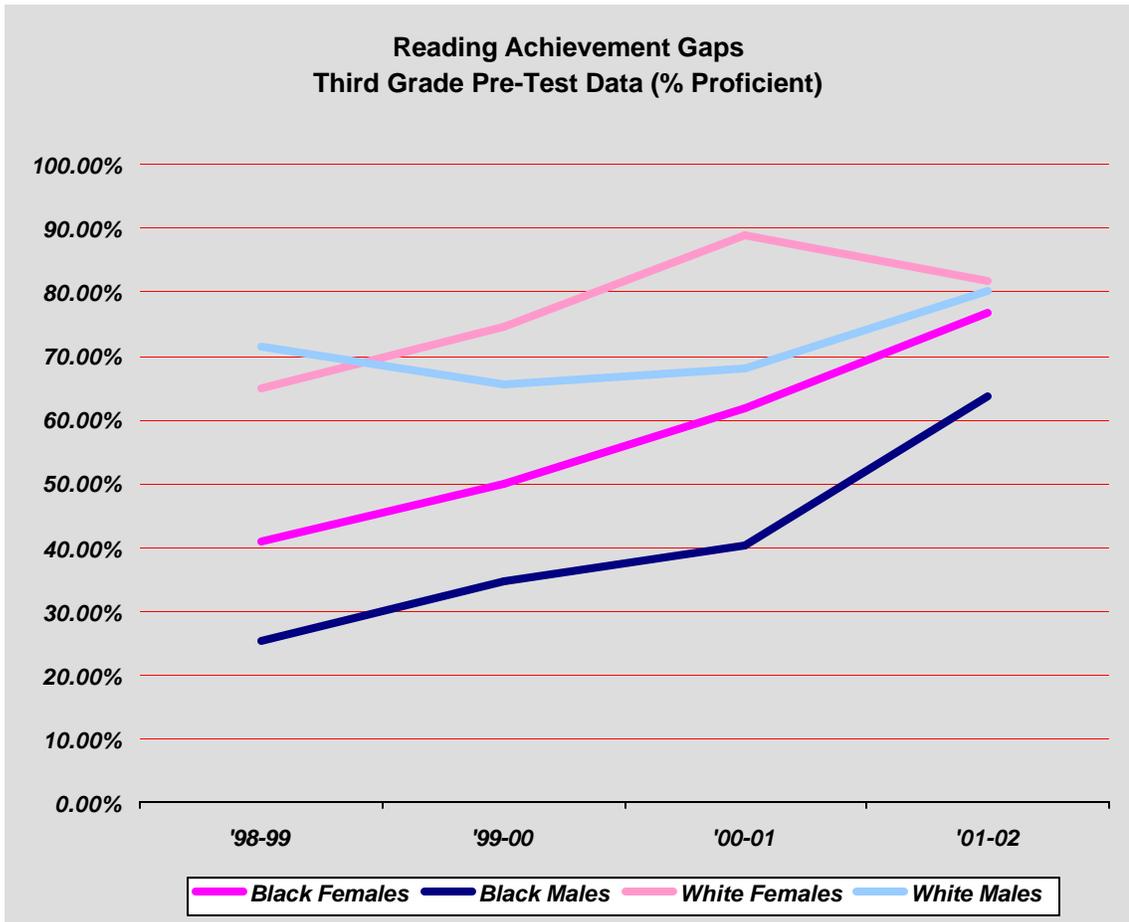
**Chart 2: Reading Achievement Gaps at Whiteville Primary School**

(and the increase in reading achievement after the implementation of Direct Instruction in January 2001)

### Reading Achievement Gaps Third-Grade Pre-Test Data (% Proficient)



**Chart 3: Decreases in the Achievement Gap after the implementation of Direct Instruction in January 2001 at Whiteville Primary School (Reading)**



Additional review of Chart 3: Decreases in the Achievement Gap Since the Implementation of Direct Instruction shows a reading gap of 46.0% for the 1998-1999 school year; 40.1% for the 1999-2000 school year, 48.5% for the 2000-2001 school year; and 18.2% for the 2001-2002 school year (after the implementation of Direct Instruction). The data as cited show that the achievement gap decreased 30.3% from 48.5% (during the 2000-2001 school year) to 18.2% (during the 2001-2002 school year). Direct Instruction was in place and used for about one half school year (from January 2001 to May 2001), and this makes the data even more convincing about the ability of Direct Instruction to close the achievement gap.

Due to a close in the achievement gap after the implementation of Direct Instruction, overall proficiency in reading (students proficient at Level 3 and 4 on the *Third Grade Pre-Test*) increased for all students. Looking at Chart 4: Increased Reading Proficiency, the data reveal that overall reading proficiency increased 8.8%: from 66.3% in 2000-2001 up to 75.1% in 2001-2002 (after the implementation of Direct Instruction). At this point, the reading achievement of third graders in Whiteville City Schools compared more favorably with those in the state and surpassed the results of Columbus County Schools by 12.0% (Table 2 above, p. 45).

#### Increases in Math Proficiency

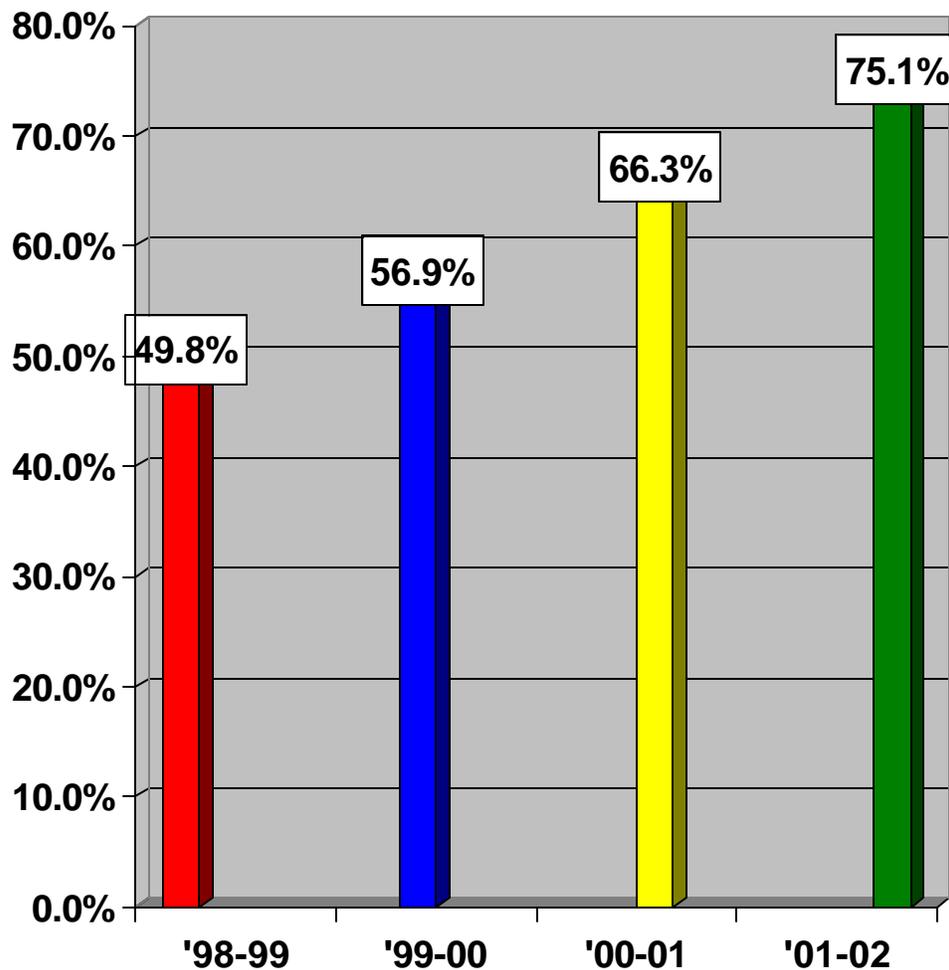
An additional benefit of using Direct Instruction has been the increase in math proficiency as demonstrated by *Third Grade Pre-Test* data during the same time periods.

Further review of Table 2 reveals:

- During the 1998-1999 school year, *Grade 3 Pre-Test* data show that Whiteville Primary school has a math proficiency rate of 60.5% compared

**Chart 4: Overall increase in Reading Proficiency at Whiteville Primary School after the implementation of Direct Instruction in January 2001**

### Increased Reading Proficiency (after implementation of Direct Instruction)



with a 74.7% proficiency rate for the state of North Carolina. Data were not available for Columbus County Schools.

- For the 1999-2000 school year, Grade 3 Pre-Test Proficiency data in math show that the state rate was 76.9%; Columbus County Schools was 76.3%; and Whiteville Primary School was 60.4%.
- For 2000-2001, Whiteville Primary School increased its math proficiency 7.2% to 67.6%, while the state average was 79.2% and Columbus County Schools was 69.5%.
- Math proficiency levels for 2001-2002 (after implementation of Direct Instruction) revealed a proficiency rate of 80.8% compared to 72.1% for Columbus County Schools. Data were not available for the state of North Carolina during this period.

Achievement gap data for math as shown on Table 3 (above, p. 56) indicate that for 1999-2000, proficiency rates were 47.7% for African American females, 39.7% for African American males, 76.3% for White females, and 74.5% for White males; and the greatest achievement gap was between White females and African American males at 36.6%. For 2000-2001, the greatest achievement gap in math proficiency of 40.8% existed between White females (80.0%) and African American males (46.2%); while African American females had an increase in math proficiency to 55.3% and White males increased to a proficiency of 80.0%.

Math achievement gap data for 2001-2002 reveals a surprising achievement gap of 24.0% between White males (90.0%) and African American females (66.0%). During this period, African American males at 81.8% showed the greatest increase in proficiency, 35.6%, from 55.3% the prior year. White females increased only .3% from the prior year up to an 87.3% proficiency level.

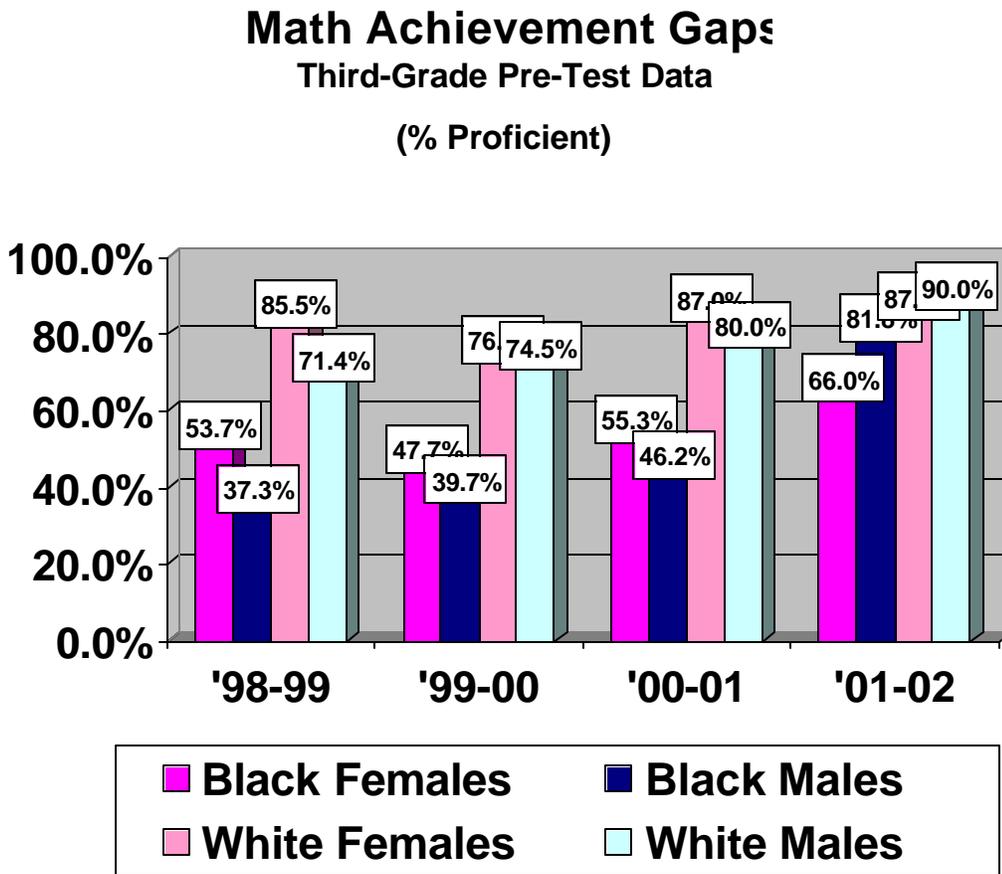
A close or narrowing of the achievement gap in reading and mathematics, after the implementation of Direct Instruction, is illustrated by Chart 1: Decreases in the achievement gap since the implementation of Direct Instruction (above, p. 53). As stated earlier, these increases in math proficiency may be also attributed to the implementation of Direct Instruction for reading as no other instructional variable changed.

An analysis of Chart 5: Math Achievement Gaps at Whiteville Primary School shows the historical implications of the differences in achievement by race and gender. The range of proficiency is 66.0% for African American females up to 90.0% for White males, with African American males at 81.8% and White females at 87.3%. The increases in proficiency and a narrowing of the achievement gap in math is attributed to reading instruction using Direct Instruction, which was implemented in January 2001.

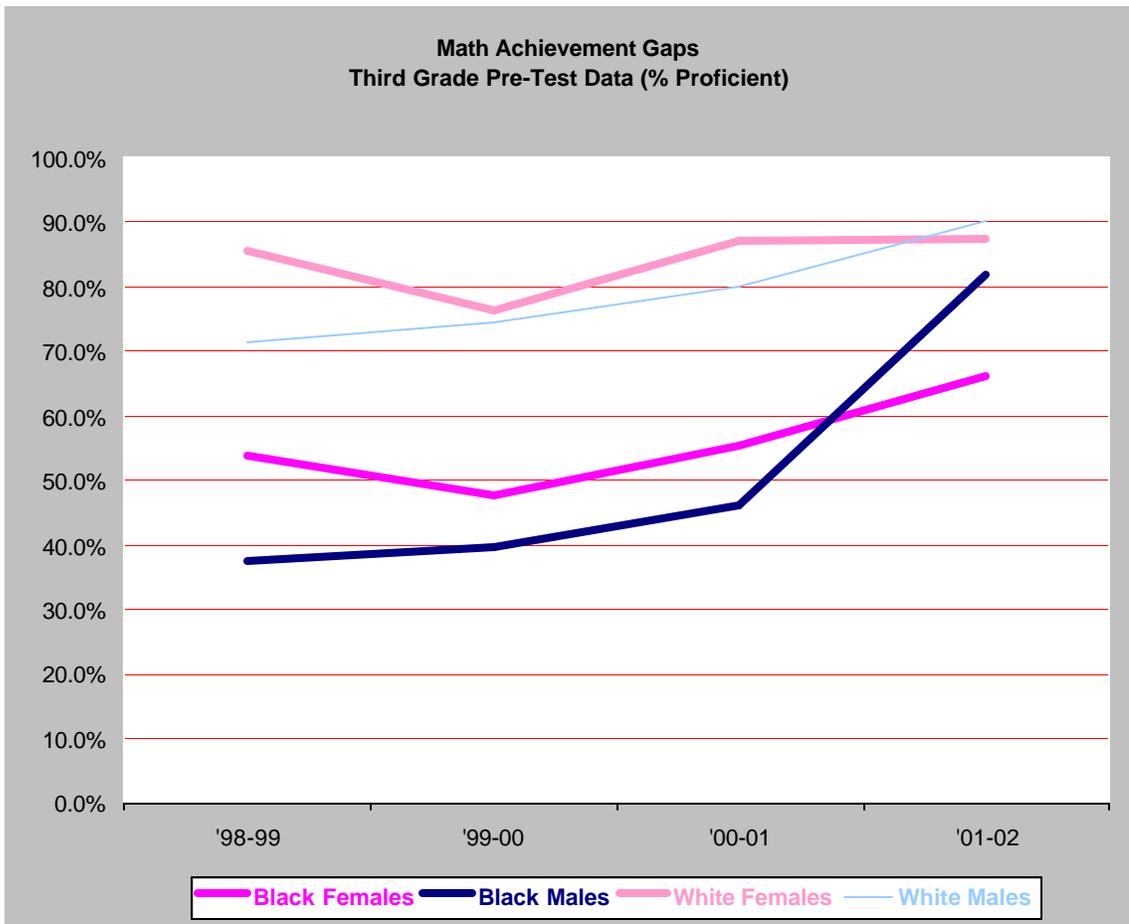
The close in the math achievement gap is evident in Chart 6: Decreases in the Math Achievement Gap. The gap for the 2001-2002 school year is 24.0%, down from 40.8% in 2000-2001, 36.6% in 1999-2000, and 48.2% in 1998-1999. Again, the close in the math achievement gap is attributed to the implementation of Direct Instruction as no other variables have been changed.

An additional bonus to the implementation and use of Direct Instruction is overall increased proficiency in mathematics. A review of Chart 7: Increase Math Proficiency and further review of Table 2 (above, p. 45) reveals that achievement in mathematics as indicated by *Third Grade Pre-Test* data shows an increase of 13.2% in proficiency up to

**Chart 5: Math Achievement Gaps at Whiteville Primary School  
(and the increase in math achievement after the implementation of Direct Instruction in January 2001)**

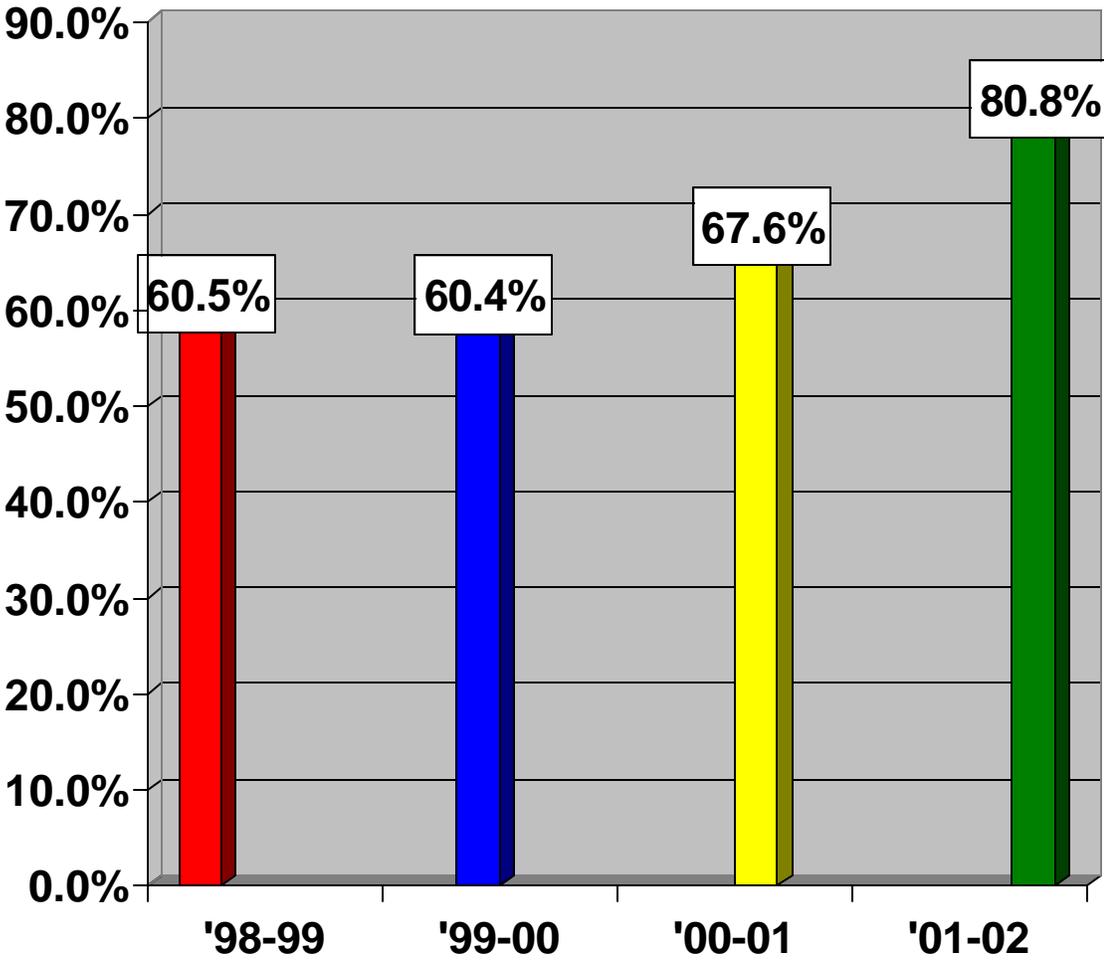


**Chart 6: Decreases in the Achievement Gap after the Implementation of Direct Instruction in January 2001 at Whiteville Primary School (Math)**



**Chart 7: Overall increase in Math Proficiency at Whiteville Primary School after the implementation of Direct Instruction in January 2001.**

# Increased Math Proficiency (after implementation of Direct Instruction)



80.8% (2001-2002) from 67.6% (2000-2001). Again, these levels compare more favorably with other third graders in the state.

## Reflections

If Mrs. High had to start the implementation over again, she would have half of her teachers start it and spend more time on the level of commitment. The increase in proficiency and the enthusiasm of a core of committed teachers would have brought the remaining and

hesitant teachers on board. Mrs. High reports that she is personally pleased with the resultant increases in reading and math proficiency. The racial achievement gap has decreased in reading from 46.0% in the fall of 1998; down to 40.1% in 1999; up to 48.5% in 2000; and down 30.3% to 18.2% in the fall of 2001 after five (5) months of Direct Instruction (Table 3 above, p. 50). For math, the racial achievement gap has also decreased over the four (4) year period: 48.2% in the fall of 1998; 36.6% in 1999; up to 40.8% in 2000; and down to 24.0% in 2001 (a decrease of 16.8%) after five (5) months of Direct Instruction (Table 3). The quick rise in achievement in African American students is attributed to Direct Instruction as no other instructional intervention was introduced during this time period.

The fact that Whiteville City Schools' third graders performed at lower rates than other third graders in the state of North Carolina and in Columbus County was also a concern. As detailed earlier in this thesis (Table 2 above, p. 45), overall student proficiency in reading and math increased, and third graders in Whiteville City Schools compare more favorably with other school districts statewide and locally. The gains that are attributed to Direct Instruction will hopefully have a lasting effect on the achievement of students in Whiteville City Schools.

## CHAPTER 5: CONCLUSIONS

The achievement gap in education between minorities (mostly African Americans) and White Americans has been a consistent fact in our history. The cost, expressed in the loss of human potential and the financing of social programs, is immeasurable. The problem has been

identified, discussed, studied, and remedies have been sought. This “educational under-class” also becomes the “economic under class,” because limited education, inadequate basic educational skills, and training leads to limited job opportunities. Limited job opportunities and low earnings are the reality for those in the educational under-class and their children, and this becomes a cycle of poverty and a generational issue for many families.

Today, the accountability for closing the achievement gap no longer remains with individuals and their families. It now falls to the administrators and leaders of our school systems. Research indicates that acquiring the proper skills in reading is the first step to success in the educational process. First, “we learn to read,” and then “we read to learn.” The continuing controversy over the most effective method of reading instruction, or the “reading wars,” has existed for many decades, but now the winner, identified in Project Follow Through, continues to be Direct Instruction. Direct Instruction is a program that has immediate and long term implications for success in reading. Although it has its detractors, Direct Instruction has been proven to be effective scientifically. When implemented properly, students have greatly and quickly improved their reading ability. These proven results, as shown by data on the 2001-2002 *Grade 3 Pre-Test*, indicate that the use of Direct Instruction at Whiteville Primary School over the months cited in this thesis was immediately and highly effective. Direct Instruction is not a fad, nor is it the latest politically correct method for teaching reading. As indicated by Ramsey (1995), politics, profits, position, power and prejudice should have no position in education, but these 5“Ps” continue to impede the education of children. When Direct Instruction is used, the real winners of the “reading wars” are the individual students who are able to successfully read in order to learn.

#### LITERATURE CITED

Adams, G. L., and Engelmann, S. (1996). Research on Direct Instruction: 25 years beyond DISTAR. Seattle, WA: Educational Achievement Systems

Agbenyega, S., and Jiggetts, J. (1999). Minority children and their over-representation in special education. *Education*, Summer 1999, v119i4, p. 619.

- Bessellieu, F. B., Kozloff, M. A., and Rice, J. S. (Undated). Teacher's perceptions of Direct Instruction teaching. NC: University of North Carolina at Wilmington, Watson School of Education. Retrieved April 1, 2002 from <http://www.uncwil.edu/people/kozloffm/teacherperceptdi.html>
- Binder, C. (1996). Behavior fluency: Evolution of a new paradigm. *The Behavior Analyst*, 19, pp. 163-197.
- Bridges, R. E. (2002). Address and Remarks at The North Carolina Commission on Raising Achievement and Closing Gaps VI, Greensboro, North Carolina. April 8-10, 2002.
- College Board, The. (1999). Reaching the top: A report of the National Task Force on minority high achievement. New York.
- Commission on Chapter 1. (1992). *Making Schools Work for Children in Poverty*. Washington, D.C.: American Association for Higher Education.
- D'Amico, (2001). A closer look at the minority achievement gap. *Educational Research Service Spectrum*. Spring 2001. Retrieved December 19, 2001 from [www.ers.org/spectrum/spg01a.htm](http://www.ers.org/spectrum/spg01a.htm)
- Duffrin, E. (1996). Direct Instruction making waves. *Catalyst*, September 1996. Retrieved April 10, 2002 from <http://www.catalyst-chicago.org/09/96mainhtm>
- Engelmann, S. (1969). *Conceptual Learning*. San Rafael, CA: Dimensions Publishing Company.
- Groves, M., and Cooper, R. (1999). Ethnic gap widens in SAT college exam scores. *Los Angeles Times*, September 1, 1999. Retrieved December 19, 2001 from <http://www.vcsun.org/~jaynepsy/satscores.htm>
- Haberman, M. (1991). "The pedagogy of Poverty versus good teaching," *Phi Delta Kappan* 73, 4: pp. 290-294.
- High, H. K. (2002). Personal communication September, 2001 and thereafter.
- Howley, C., and Huang, G. (1991). School completion 2000: Dropout rats and their implications for meeting the national goal. *ERIC Digest*. May 1991.
- Ingersoll, R. (1999). The problem of underqualified teachers in American secondary schools. *Educational Researcher*, March 1999.
- Johnston, R., and Viadero, D. (2000). Unmet promise: Raising Minority Achievement. *Education*

Kahlenberg, R. D. (2000). Economic school integration. *The Century Foundation Idea*, Brief No. 2.

Kameenui, E. J., and Carnine, D. W. (1998). *Effective teaching strategies that accommodate diverse learners*. Upper Saddle River, NJ: Merrill

Kirsch, I. S., Jungeblut, A., Jenkins, L., and Kolstad, A. (2001). Executive summary of adult literacy in America: A first look at the results of the national adult literacy survey. National Assessment of Adult Literacy. Retrieved April 10, 2002 from <http://nces.ed.gov/naal/resources/execsumm.asp>

Kozloff, M. A., and Bessellieu, F. B. (2000). Direct Instruction is developmentally appropriate. Wilmington, NC: University of North Carolina, Watson School of Education. April 2000. Retrieved December 19, 2001 from <http://uncwil.edu/people/kozloffm/dideveoapp.html>

Kozloff, M. A., LaNunziata, L., and Cowardin, J. (1999). Direct Instruction in education. Wilmington, NC: University of North Carolina at Wilmington. Retrieved December 19, 2001 from <http://uncwil.edu/people/kozloffm/diartcle.html>

Kozloff, M. A., LaNunziata, L., Cowardin, J., and Bessellieu, F. B. (2000). Direct Instruction: Its contributions to high school achievement. NC: University of North Carolina at Wilmington and New Hanover County Schools. July 2000. Retrieved December 19, 2001 from <http://www.uncwil.edu/people/kozloffm/dihighschool.html>

Lucas, S. R. (2000). Hope, anguish, and the problem of our time: An essay on the publication of the black-white test score gap. *Teachers College Record*. February 2000, pp. 461-473.

Lyon, G. R. (2001). Overview of reading and literacy initiatives. Statement presented before the Committee on Labor and Human Resources, Washington, DC, April 28, 1998.

Lyon, G. R., and Kameenui, E. J. (1998). National Institute of Child Health and Human Development (NICHD) research supports the America reads challenge. National Institute of Health and Human Development, pp. 2-5. Retrieved April 10, 2002 from <http://www.ed.gov/inits/americanreads/nichd.html>

Mack, S. (2000). High stakes testing of students. Berkley School of Law. Spring 2000. Retrieved February 15, 2002 from <http://www.law.berkeley.edu/faculty/sugarmans/HighStakes.htm>

Manglify, Dawn D. Bennett-Alexander, Esq. (1989). Some daily effects of white privilege. University of Georgia's Terry College of Business. July/August 1989. Retrieved March 5, 2002 from <http://www.terry.uga.edu/~dawn/dba/index.htm>

- McMillen, I. M., and Kaufman, P. (1994). Dropout rates in the United States: 1994. Washington, DC: U. S. Department of Education, National Center for Education Statistics, NCES 96-863, 1994.
- Meyer, L., Gersten, R., and Gutkin, J. (1983). Direct Instruction: A Project Follow Through success story in an inner-city school. *Elementary School Journal*, 84, pp. 241-252.
- Montgomery, A. F., and Rossi, R. J. (1994). Becoming at risk of failure in America's schools. In R. J. Rossi (Ed.) *Schools and students at risk*. New York: Teachers College Press
- National Assessment of Adult Literacy. (1999). Frequently asked questions: Background and purpose. National Center for Education Statistics. Retrieved April 10, 2002 from <http://nces.ed.gov/naal/faq/faqpurpose.asp>
- National Center for Education Statistics. (1999). Teacher quality: A report on the preparation and qualifications of public school teachers. Washington, DC: U. S. Department of Education, January 1999.
- National Center for Education Statistics. (2001). Reading gap widens between high- and low-performing fourth-grade students. April 6, 2001. Retrieved March 3, 2002 from [http://nces.ed.gov/Pressrelease/rel2001/4\\_6\\_01.asp](http://nces.ed.gov/Pressrelease/rel2001/4_6_01.asp)
- National Reading Panel. (2001). Teaching children to read: A evidence-based assessment of the scientific literature on reading and its implications for reading instruction. September 2001.
- North Carolina Commission on Raising Achievement and Closing Gaps: First Report to the State Board of Education, December 2001.
- O'Day, J. A., and M. S. Smith. (1993). "Systemic Reform and Educational Opportunity." *Designing Coherent Education Policy: Improving the System*, edited by S. H. Fuhrman. San Francisco, CA: Jossey-Bass.
- Ramsey, R. (2001). The negative impact of special education on minority students. Paper presented at The North Carolina Commission on Raising Achievement and Closing Gaps V, Greensboro, North Carolina, March 26-28, 2001.
- Ramsey, S. B. (1995). Education today: Politics, profits, position, power, and prejudice. *Education Reporter*. December, 1995. Retrieved July 9, 2001 from <http://www.eagleforum.ort/educate/1995/dec95/ibm.html>

- Report of the Charter G: Ad Hoc Special Committee on Persistent Reading Difficulties. (1998). *Read by Grade 3: Reading and Reading Disabilities*. Retrieved December 16, 2001 from <http://www.readbygrade3.com/readbygrade3co/peer.htm>
- Tapia, R., and Lanius, C. (2000). Under represented minority achievement and course taking - the kindergarten-graduate continuum. Retrieved December 19, 2001 from [http://www.wcer.wisc.edu/mise/News\\_Activities/Forum/Tapiaper.htm](http://www.wcer.wisc.edu/mise/News_Activities/Forum/Tapiaper.htm)
- U. S. Department of Education's National Center for Education Statistics. Dropout rates remain stable over last decade. December 17, 1997. Retrieved December 19, 2001 from <http://nces.ed.gov/Pressrelease/dropout.html>.
- Whiteville Primary School web page. Retrieved June 6, 2002, from <http://www.wps.whitville.k12.nc.us/>

## APPENDIX

## BIOGRAPHICAL SKETCH

Vicki Dian Frink-Lawrence was born in Whiteville, North Carolina to Mrs. Christine Nance Frink and the late Roosevelt (R.V.) Frink. She was raised in Chadbourn, North Carolina, and she graduated from Westside High School, Chadbourn as Valedictorian of her class. Mrs. Lawrence attended Fayetteville State University, Fayetteville, North Carolina for one year before relocating to the New Jersey shore. Mrs. Lawrence graduated from Monmouth University, West Long Branch, New Jersey with a B.S. degree in Business Administration. For nine years, she worked for the U. S. Treasury Department as a National Bank Examiner.

Mrs. Lawrence returned to Monmouth University and received a M.A.T. in Business Education. She became a business teacher at Neptune High School, Neptune, New Jersey. In 1995, Mrs. Lawrence became a Department Chairperson/Supervisor of Instruction for six academic departments at the high school: Mathematics, Business, Industrial Arts/Technology (including a TV station), Fine Arts, Music, and Family/Consumer Sciences.

In 1998, Mrs. Lawrence returned to Chadbourn, where she found employment as a Banking and Finance instructor at Southeastern Community College, Whiteville and with the Columbus County School system. In 1999, Mrs. Lawrence became Assistant Principal at Edgewood Elementary School, Whiteville. Mrs. Lawrence was transferred to Whiteville High School during the summer of 2000, where she served as Associate Principal and Curriculum Coordinator. Upon her request, Mrs. Lawrence returned to Edgewood in 2001 where she loves going to school each day.

While Mrs. Lawrence misses her close proximity to the beaches of the New Jersey shore, she enjoys being back in North Carolina. Frequent visits keep her in close contact with her son, Willie Travis, II, and her grandson, Julian T. Lark, II.