



INFORMATION CAPSULE

Research Services

Vol. 0901
July 2009

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THE EFFECT OF POVERTY ON STUDENT ACHIEVEMENT

At a Glance

There is a strong relationship between students' socioeconomic status and their levels of academic achievement. Although educators should be held accountable for improving the performance of all students, including those living in poverty, schools alone can't eliminate the negative factors associated with poverty that lead to a large achievement gap between low income students and their more affluent peers. Factors that have a negative effect on poor students' achievement but are beyond schools' control include a higher incidence of prenatal adversity, illness and injury, exposure to pollutants, nutritional problems, residential mobility, and a lack of educational activities and materials in the home. This Information Capsule reviews studies conducted on the relationship between poverty and student achievement, including the effects of both individual poverty and school poverty concentration on academic performance. Research indicates that low income students tend to have significantly lower levels of academic achievement than their more affluent peers. The number of disadvantaged students attending a school also affects student performance: students at all income levels have been found to have lower levels of achievement when they attend schools with high poverty concentrations. Data collected within Miami-Dade County Public Schools confirmed that as poverty concentrations in the District's schools increase, academic performance declines. Finally, strategies to help schools raise low income students' achievement levels are summarized.

The National Center for Children in Poverty reported that in 2007, 13.2 million American children (18 percent of all children in the country) were living in poverty (Douglas-Hall & Chau, 2008). According to the U.S. Census Bureau (2006), 110,640 Miami-Dade County children under the age of 18 (or 19.6% of the county's children) were living in poverty in 2006. Because of the weak economy and higher unemployment and foreclosure rates, school districts across the country are reporting increases, some as high as 40 percent, in the number of homeless students enrolled in their schools over the past year (Abramson, 2009; Adamsick, 2009; Herndon, 2009; Huus, 2009; Kingsbury, 2009; Duffield & Lovell, 2008). During the 2007-08 school year, 2,382 homeless students enrolled in Miami-Dade County Public Schools, an 8 percent increase from 2006-07 (Daniel, 2009).

Childhood poverty poses serious problems for public education. Children raised in poverty generally achieve at lower levels than their more advantaged peers and researchers have found that income level is one of the most powerful predictors of students' academic performance (Reeves, 2009; Levin, 2007; Pellino, 2007; Butler, 2006; Nelson, 2006; Rowan et al., 2004). The American Association of School Administrators (2008) stated: "The many and varied effects of poverty form the single greatest factor limiting student achievement. The most prevalent and persistent gaps in student achievement are a result of the effects of poverty."

Can Schools Close the Achievement Gap?

The No Child Left Behind Act (NCLB), the nation's accountability system, was created based on the assumption that tough accountability standards would close the achievement gap. Many experts argue that NCLB is seriously flawed because it holds schools accountable for student achievement without regard to factors over which they have little or no control (Berliner, 2009). Reeves (2009) stated: "This accountability methodology remains indifferent to the causes of improved student achievement. It's as if the government chose to combat adolescent obesity only by weighing students."

Similarly, Barton (2004) asked readers to consider the example of "a malnourished child who entered the world at below average birth weight and now has health problems and decaying teeth. Will high standards, test-based accountability, and higher quality teaching boost this child's achievement enough to eliminate the gap?"

Proponents of NCLB contend that blaming low levels of student achievement on poverty is just an excuse for schools' inability to successfully educate all children. They believe that poverty does not "cause" low achievement and that low-performing schools are simply failing to bring disadvantaged children up to proficiency standards (Rothstein, 2008; Clabaugh, 2007; Levin, 2007; American Association of School Administrators, 2005; Bracey, 1999).

Most researchers concur that even schools with high concentrations of students in poverty should be expected to increase the achievement of all of their students; however, it is unreasonable to expect schools to completely eliminate large pre-existing inequalities (Berliner, 2009; American Association of School Administrators, 2008; Rothstein, 2008; Lee and Burkam, 2002). Studies have not established the degree to which actions taken by schools, such as increased instructional time, tutors, and highly experienced teachers, can narrow the gap related to childhood poverty (Rothstein, 2008; Barton, 2004).

The general consensus within the educational community is that closing the achievement gap between poor students and their more advantaged peers must be more than a one-front operation. Educators must be held accountable for improving student performance, but policymakers must recognize that the achievement gap has deep roots. Governments, communities, neighborhoods, and families must also make efforts to remove the barriers to high student achievement (Kannapel & Clements, 2005; Barton, 2004).

Non-School Factors Affecting Low Income Students' Levels of Achievement

Non-school factors play a major role in student learning. Schools do not operate in a vacuum and children's home lives have a strong influence on their academic performance. Each non-school factor may cause only a small decrease in students' performance, but when combined, they can lead to significant increases in the achievement gap (Berliner, 2009; Rothstein, 2008; Clabaugh, 2007; Hampden-Thompson & Johnston, 2006; Evans, 2004). The American Association of School Administrators (2008) stated that addressing each non-school factor is critical to eliminating the achievement gap.

Following is a description of non-school factors that have a negative influence on low income students' levels of academic achievement.

- **Prenatal disadvantages.** Schools with larger proportions of economically disadvantaged students enroll greater numbers of children born at low birth weights. Studies have found that children born at low birth weights have IQs ranging from nine to 11 points lower than children born at standard weights (Barton & Coley, 2009; Berliner, 2009; Renchler, 1993). Lower birth weights have also been linked to greater frequencies of attention deficit hyperactivity disorders. In addition, women living in poverty are more likely to use alcohol, tobacco, or cocaine while pregnant; more likely to experience higher levels of stress and anxiety during their pregnancies; and less likely to get a flu shot (influenza during critical periods of

pregnancy has been associated with higher rates of schizophrenia) (Berliner, 2009; Rothstein, 2008; Pellino, 2007).

- **Increased illness and injury.** In 2007, 8.1 million (or 11 percent) of all U.S. children had no health insurance. This number does not include children covered by policies that require large copayments or who have only limited coverage (Berliner, 2009; Pellino, 2007). The American Association of School Administrators (2008) reported that the test scores and school attendance of uninsured children improve dramatically after they gain access to health care. There are fewer primary care physicians in low income communities, where the physician-to-population ratio is less than one third of that in middle class communities. Therefore, even disadvantaged children with health insurance are more likely to miss school for illnesses or injuries that middle class children have treated promptly (Rothstein, 2008).

Research confirms that childhood illness and injury affect school performance because they increase absenteeism and limit students' ability to focus on learning. Children living in poverty are six times more likely to experience a wide variety of illnesses and injuries compared to children from higher income families. Many children from poor families also have undiagnosed vision problems and when they are diagnosed, follow-up care is less likely. Studies have found that even vision screening in schools has a higher failure rate in detecting problems than examinations conducted by eye care professionals; however, the poor and uninsured often can't afford those examinations. Children living in poverty are less likely to visit a dentist when they have a cavity or toothache. Among families living in poverty (under \$20,000 for a family of four), 34 percent reported that their children had not seen a dentist in the last year (Berliner, 2009; Bruce, 2008; Rothstein, 2008).

Poverty has been strongly linked to childhood injuries related to risks in the home. Low income families live in homes with fewer smoke detectors and fire extinguishers, more ungated stairs, and more unlocked cabinets and closets. Children from low income families are also in greater danger of being hit by a car due to heavier volumes of street traffic (Evans, 2004).

- **Nutritional problems.** Poor diets, hunger, and related nutritional problems have adverse effects on student achievement. Food insecurity (or difficulty providing enough food for all family members) has been reported in more than 10 percent of U.S. households, affecting about 13 million homes. Rates of food insecurity were found to be 3.4 times higher in households with incomes below the official poverty line. To combat the negative effects of nutritional deficits on test scores, some high poverty schools calorie load students on test days to give them the energy they need to perform well. Studies have reported test score gains of between four and seven points when schools provide their students with extra food on test days (Barton & Coley, 2009; Berliner, 2009; Bruce, 2008; Rothstein, 2008).
- **Exposure to pollutants.** Poor children are more likely to live in homes with lower air and water quality. Residing close to landfills or waste treatment, storage, and disposal facilities increases the chances that children will be exposed to dangerous industrial chemicals. Lead is another major pollutant that can cause neurological damage in young children. Deteriorated lead paint and elevated levels of lead-contaminated house dust are found in approximately 4.5 million U.S. homes with young children and experts have estimated that there are about half a million lead-poisoned children in the U.S. Exposure to pesticides has also been strongly linked to income. In addition, many low income children live near major highways and are exposed to diesel exhaust fumes as trucks drive to and from industrial and commercial sites (Barton & Coley, 2009; Berliner, 2009; Rothstein, 2008; Evans, 2004).
- **Hazardous neighborhoods.** Many low income neighborhoods are characterized by social disorganization (crime, unemployed adults, and neighbors who don't monitor the behavior of adolescents) and fewer resources for childhood development (such as playgrounds, child care centers, health care facilities, and parks) (Berliner, 2009; Rothstein, 2008; Balfanz, 2006; Evans, 2004; Brooks-Gunn & Duncan, 1997).

The basic infrastructure of low-income neighborhoods is often lacking, with substandard housing, abandoned lots and buildings, and inadequate municipal services, such as garbage collection and police and fire protection. These neighborhoods tend to have fewer retail facilities, such as supermarkets. Moreland and associates (2002) reported that low income neighborhoods have one-third as many supermarkets, but triple the number of bars and taverns as middle and upper income neighborhoods. Access to supermarkets has been linked to healthier dietary intake (Evans, 2004).

In addition, more affluent role models are missing in low income neighborhoods. Children are less likely to be exposed to college-educated adults with professional careers (Berliner, 2009; Rothstein, 2008; Nelson, 2006; Evans, 2004).

- **Struggle to survive.** Poor children may not focus on academics because they are just struggling to survive (Pellino, 2007; Butler, 2006; Evans, 2004). A study of eight middle schools in three impoverished Midwest communities found that 99 percent of students, residents, and community leaders rated “family safety” or “staying alive” as residents’ primary concern (Pena, 1998).
- **Family violence.** Children living in poverty are exposed to more incidents of family disruption and violence. Children who have been exposed to violence often display social and emotional problems, such as higher rates of aggressive behavior, depression, and anxiety (Evans, 2004). In addition, parenting styles in disadvantaged homes tend to be harsher and more punitive (Pellino, 2007; Evans, 2004).
- **Lack of adult attention.** Parent availability as a role model or participant in their children’s education is often limited in low income households. Parents may work two jobs, forcing children into parental roles with younger siblings (Rothstein, 2008; Pellino, 2007; Butler, 2006; Nelson, 2006). Lee and Burkam (2002) analyzed data from the U.S. Department of Education’s Early Childhood Longitudinal Study, Kindergarten Cohort (ECLS-K), a representative sample of more than 16,000 five and six year old children nationwide. They found that children from families with the lowest incomes were more likely to live with only one parent than children from the highest income families (48 percent versus 10 percent). Hampden-Thompson and Johnston’s (2006) analysis of test scores from administrations of the Program for International Student Assessment (PISA) found that students in the U.S. who lived in two-parent households received higher math literacy scores, on average, than students who lived with only one parent.
- **Residential instability.** Families struggling economically may move frequently, resulting in irregular attendance at school, little or no continuity of instruction, and children’s need to repeatedly adjust to new school environments. Highly mobile students often come to school with no records from their previous schools and it may be difficult for schools to access their records. Schools are challenged with placing children in the appropriate classrooms and providing them with the needed services (Rothstein, 2008; Pellino, 2007; Butler, 2006; Nelson, 2006). The National Center for Children in Poverty reported that 18 percent of children in low income families (5.1 million) moved in 2007, compared to 8 percent of children in middle and higher income families (3.5 million) (Douglas-Hall & Chau, 2008). According to Berliner (2009), 30 percent of the nation’s poorest children have attended at least three different schools by third grade.
- **Lack of educational activities and materials.** Low income children experience substantially less cognitive stimulation and enrichment in comparison to more affluent children. Many disadvantaged homes do not have the resources (such as books and educational toys) and or offer the experiences (including educational interactions with parents) that provide a foundation for learning (Bruce, 2008; Rothstein, 2008; Pellino, 2007; Butler, 2006; Hampden-Thompson & Johnston, 2006; Evans, 2004).

A recent study found that almost half of families with young children receiving public assistance had no alphabet books in the home, compared with only 3 percent of professional families (Barton & Coley, 2009). Lee and Burkam (2002) analyzed data from the U.S. Department of Education’s Early Childhood

Longitudinal Study, Kindergarten Cohort (ECLS-K), a representative sample of over 16,000 five and six year old children nationwide. They compared families who fell in the lowest and highest fifths of socioeconomic status. The most disadvantaged students:

- owned 38 books, compared to 108 books owned by the top fifth;
- were read to less often (63 percent were read to three or more times a week, compared to 94 percent of high income students);
- were less likely to have a computer in the home (20 percent versus 85 percent); and
- spent more hours per week watching television (18 hours versus 11 hours).

The Federal Interagency Forum on Child and Family Statistics (2000) reported that 38 percent of low income U.S. parents read to their 3-5 year old children daily, compared to 58 percent of higher income parents. Twenty-two percent of low income parents reported taking their children to the library at least once in the previous month, compared to 40 percent of higher income parents. Becker (2000) found that not only were disadvantaged children less likely to have access to a home computer or the Internet, but those who did have computers had poorer quality hardware and tended to use them in less educational ways (for example, playing games versus word processing).

Research has also confirmed that low income parents speak less often and in less sophisticated ways to their children. Studies have shown that middle class parents speak with their children in ways that build confidence, reasoning, and negotiating skills, while low income parents tend to give orders to their children (Berliner, 2009; Rothstein, 2008; Nelson, 2006; Evans, 2004).

Poor children are not exposed to the same types of activities as children at other income levels. They have fewer visits to museums and zoos, fewer music or dance lessons, and lower levels of participation in organized sports leagues, all of which have been found to promote the development of cultural awareness, ambition, and self-confidence (Rothstein, 2008; Pellino, 2007).

Research on the Effects of Poverty on Academic Achievement

Researchers have long recognized that both the individual background characteristics of students and the compositional characteristics of their school's student body can affect student achievement. Although studies indicate that low income students generally have lower levels of academic achievement than their more affluent peers, the number of economically disadvantaged students attending a school also affects student performance. All students, whether they are from low, middle, or high income backgrounds, have been found to have lower levels of achievement when they attend schools with high concentrations of poor students.

As far back as 1966, James Coleman published "Equality of Educational Opportunity" which later became known as the Coleman Report. This report was in response to the Civil Rights Act of 1964 which assumed widespread inequality of opportunity in education. After studying 600,000 students in 4,000 schools nationally, Coleman concluded that it was not funding discrepancies between schools attended by white and black students that were the determining factor, instead family economic status was far more predictive of academic success. This has been referred to as the ". . . single best-known piece of quantitative social science in American history" (Lemann, 2000). The findings from this historic report sparked the debate regarding family background as one of the most important explanations for student academic achievement.

Research conducted on the relationship between poverty and academic achievement is summarized below. Studies are divided into the following two categories: the effect of individual poverty level on academic achievement and the effect of schools' poverty concentration on academic achievement.

Effect of Individual Poverty Level on Academic Achievement

Research shows there is a strong relationship between students' socioeconomic status and their levels of academic achievement. Low income students have been found to have significantly lower test scores in core subjects than their more advantaged peers.

- Barton and Coley (2009) documented the gap in National Assessment of Educational Progress (NAEP) test scores between students from different socioeconomic backgrounds. On the 2007 eighth grade NAEP reading and math tests, lower income students (defined as those eligible for free or reduced price lunch) scored 25 and 28 points lower, respectively, than higher income students (defined as not eligible for free or reduced price lunch).
- Berliner (2009) reported that low income fourth grade students (defined as those eligible for free or reduced price lunch) received lower 2005 NAEP math scores than middle income students (defined as not eligible for free or reduced price lunch), regardless of the poverty concentration of the schools students attended.
- Smith, Brooks-Gunn, and Klebanov (1997) used data from the Children of the National Longitudinal Survey of Youth and the Infant Health and Development program to compare families with incomes above and below the poverty threshold. The poorest children scored between 6 and 13 points lower on various standardized tests of IQ, verbal ability, and achievement. The authors noted that a 6 to 13 point test score difference could mean the difference between being placed in a special education versus a traditional class. Test score differences were present even after the researchers controlled for maternal age, marital status, parent education, and ethnicity. Children in families with incomes closer to, but still below, the poverty line also received lower test scores than children in higher income families, but the differences were smaller. The size of the effects was similar for children from ages three to eight, leading the researchers to conclude that the effects of poverty on children's cognitive development occurred early in their lives.
- Based on data from the U.S. Department of Education's Early Childhood Longitudinal Study, Kindergarten Cohort (ECLS-K), Rowan, Cohen, and Raudenbush (2004) reported that the gaps in achievement between poor and advantaged students were substantial. Students in the lowest fifth of family income scored at the 30th percentile on the ECLS reading assessment; students in the middle fifth scored at the 45th percentile; and students in the top fifth scored at the 70th percentile.
- Gottlieb (2002) reported on a study commissioned by The Piton Foundation that found low income students received significantly lower test scores than their more affluent peers. The study analyzed the Colorado Student Assessment Program (CSAP) and Iowa Test of Basic Skills (ITBS) reading test scores of 13,245 grades 3-5 students from 89 Denver elementary schools. A strong correlation was found between students' income level and test scores, with 85 percent of the differences in test scores between high and low performing students explained by socioeconomic status. No other variable approached significance, including size of the school, percent of English language learners, mobility rate, percent of highly experienced teachers, and teacher turnover.
- Lee and Burkam (2002) analyzed data from the U.S. Department of Education's Early Childhood Longitudinal Study, Kindergarten Cohort (ECLS-K), a representative sample of over 16,000 five and six year old children nationwide. They found that children from families with the lowest income levels entered kindergarten with fewer cognitive skills than children from the higher income groups. Math and reading scores for new kindergarteners from the lowest socioeconomic group were 60 percent and 56 percent lower, respectively, than the scores of students in the top socioeconomic group.
- Dahl and Lochner (2008) analyzed the test scores of almost 5,000 children from the National Longitudinal

Youth data set and found that a \$1,000 increase in family income resulted in a significant increase in combined math and reading test scores. They concluded that families' current income had a powerful effect on children's academic achievement.

- Levy and Duncan (2000) used data from 1,364 families that were part of the Panel Study of Income Dynamics, a longitudinal survey of U.S. households, to examine the effect of family income on children's years of completed schooling. They calculated that providing a family with a 2.7 fold increase in their income annually for the first 15 years of their children's lives would increase the length of their children's education by about three-quarters of a year. Furthermore, the researchers found that the timing of the income increase was important, with the increase having the greatest effect on children who were between birth and four years old. The researchers theorized that income had a greater impact on younger children because family influence is greatest at that time. Additional analyses found that the effect of income on years of completed schooling was similar for boys versus girls and for black versus non-black children.
- Duncan and associates (1998) evaluated how the timing of family income effected completed schooling. They found that average family income from birth to age 5 had a much more powerful effect on the number of school years completed than family income at ages 5 to 10 or ages 11 to 15. For low income children, a \$10,000 increase in average family income between birth and age 5 was associated with almost a full year increase in completed schooling. Similar increments to family income later in childhood had no significant impact on years of completed schooling. The researchers concluded that family income was an important determinant of how many years of schooling children completed, but only during the early childhood years.
- Morris, Duncan, and Rodrigues (2004) pooled data from four studies that evaluated eight welfare and anti-poverty programs, providing observations of 10,997 children ages 2-15. The programs were designed to increase family incomes by providing larger welfare payments or work-conditioned cash supplements. Welfare recipients were randomly assigned to one of the eight anti-poverty programs or to a control group that received welfare as usual. Analyses found that a \$1,000 increase in annual family income had a significant impact on school achievement for the youngest students (ages 2-5), but no significant effect on the achievement of students at ages 6-15.

Effect of School Poverty Concentration on the Academic Achievement

It is a well accepted fact that high poverty schools have many educational challenges. Schools that serve the poor are most heavily affected by non-school factors. Berliner (2009) stated: "As wonderful as some teachers and schools are, most can't eliminate inequalities that have their roots outside their doors and that influence events within them . . . A good portion of the achievement gap is caused by non-school factors and schools, as they are ordinarily configured, are not in a position to eliminate those gaps."

In addition, the student and faculty turnover at high poverty schools is usually higher; parental support tends to be much weaker; needed resources are often absent; student motivation may be lower; the potential for disruption and disciplinary problems is more acute; and the curriculum may be less challenging (Barton & Coley, 2009; University of North Carolina Center for Civil Rights, 2005; Kahlenberg, 2004; U.S. Department of Education, 2003).

Studies have demonstrated that student achievement falls as the poverty level of a school rises. There is some evidence that certain school characteristics, such as high teacher expectations, a safe environment, and time spent in constructive activities both in and out of school may help to close the achievement gap between high and low poverty schools.

- Berliner (2009) reported that the average math scores of U.S. fourth graders on the 2007 Trends in International Mathematics and Science Study (TIMSS) decreased as the percent of disadvantaged students

in their school increased. The average score of students attending higher income schools (less than 10 percent of students eligible for free or reduced price lunch) was 104 points higher (583 versus 479) than the average score of students attending lower income schools (75 percent or more students eligible for free or reduced price lunch). Berliner (2009) also reported that both low and middle income fourth grade students' 2005 NAEP math test scores decreased as their school's poverty concentrations increased.

- Kahlenberg (2004) analyzed fourth grade math test scores from the 2000 administration of the NAEP. He found that low income students attending middle class schools (defined as 26-50 percent of students eligible for free or reduced price lunch) scored higher on average than middle class students attending high poverty schools (defined as 76-100 percent of students eligible for free or reduced price lunch). Low income students attending middle class schools received an average score of 219, while middle class students attending high poverty schools received an average score of 212.
- Anderson and colleagues (1992) analyzed data from the National Education Longitudinal Study of 1988. Analyses were conducted on the reading, math, history, and science test scores of almost 20,000 U.S. public school students. The researchers found that students in the poorest schools (based on the percent of students eligible for free or reduced price lunch) scored at lower levels than those attending more affluent schools. While there was a steady decrease in average test scores as the school poverty level increased, the greatest declines were found at schools with the highest concentrations of low income students. Students in these schools (51-75 percent and 76-100 percent of their students eligible for free or reduced price lunch) received substantially lower scores than their peers attending higher income schools in all four subject areas.
- Rumberger and Palardy (2002) used data from the National Education Longitudinal Survey of 1988 to estimate the achievement growth between eighth and twelfth grade in reading, math, science, and social studies for a sample of 14,217 students attending a representative sample of 913 U.S. high schools. They found that students (regardless of their race, income level, or prior academic achievement) who attended high schools with more affluent students received higher test scores, on average, than students who attended schools with high poverty concentrations.

The study also investigated why socioeconomic composition impacted student performance by exploring three possible explanatory factors: the structural features of the school (private, magnet, or traditional public school; and size of the school); school resources (including the student-teacher ratio, average teacher salary, percent of certified teachers, and teacher experience); and school policies and practices (such as parent involvement, disciplinary procedures, and time spent on homework). The researchers found that controlling for schools' structural characteristics and resources did not reduce the effect of schools' poverty concentration on students' test scores. However, controlling for four school policies and practices did in fact decrease the influence of poverty concentration on students' reading, math, and social studies test scores: higher teacher expectations about students' ability to learn; more homework completed each week; higher enrollment in advanced courses; and fewer students reporting they felt unsafe at school. In science, controlling for these factors reduced but did not eliminate the significant impact of school poverty concentration on achievement growth.

- The Florida Office of Program Analysis and Government Accountability examined 1995 test score data from five Florida school districts (Broward, Hillsborough, Leon, Miami-Dade, and Orange). Analyses revealed that, across all grade levels, students attending high poverty schools were more likely to have lower standardized writing, reading, and math test scores than students attending more affluent schools (Florida State Legislature, 1997).
- Tschinkel (1999) analyzed the 1997 combined writing, reading, and math test scores of students in seven school districts within the state of Florida (Broward, Duval, Hillsborough, Miami-Dade, Palm Beach, Pinellas, and Orange). He controlled for a number of student and school factors, including: student mobility;

frequency of long absences; number of gifted, limited English proficient, and disabled students; percent of students eligible for free or reduced price lunch; teachers' average years of experience; the number of teachers holding master's degrees; the number of students enrolled in the school; the number of teachers and staff working at the school; average class size; and per-student costs. In all districts, 60 to 80 percent of the differences in school performance were associated with a single factor - the percent of students eligible for free or reduced price lunch. Only a small proportion of test score differences among schools were explained by student and school factors other than those associated with poverty. When the effect of student poverty was statistically removed, there was no significant difference in performance between most schools.

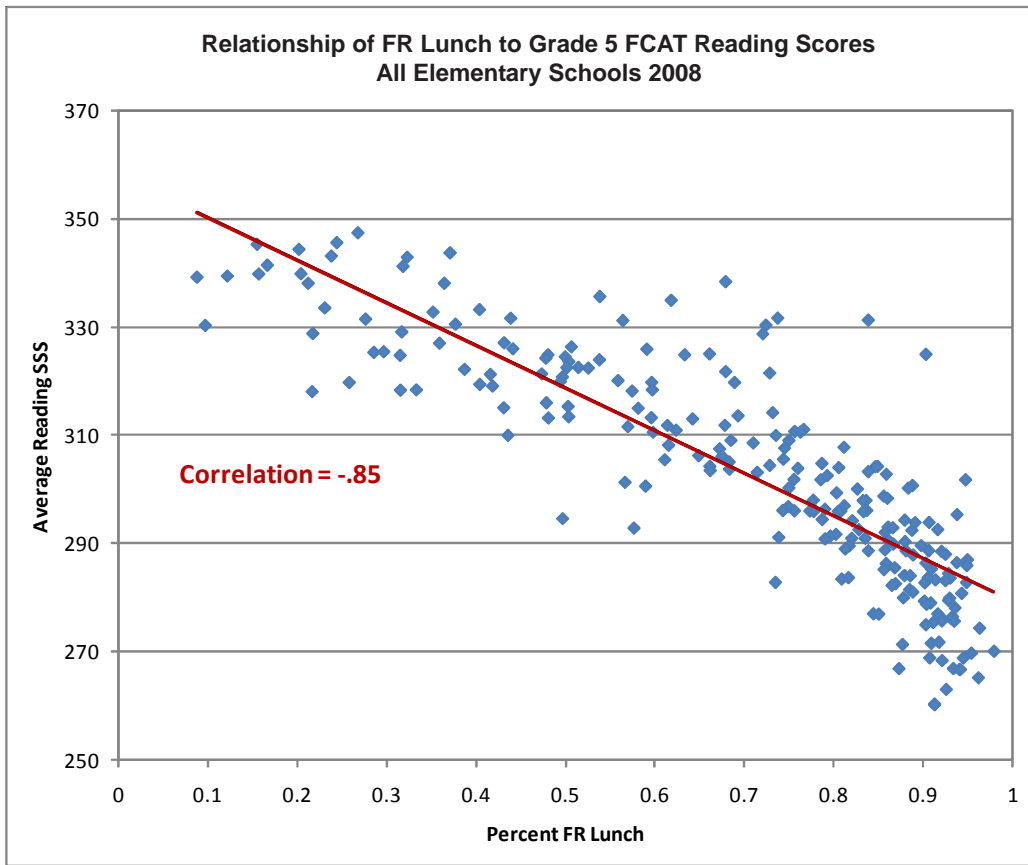
- Banks (2001) investigated the impact of moving from a low poverty school to a high poverty school on students' North Carolina End-Of-Grade (EOG) test scores. Analyses were conducted on the EOG reading and math test scores of grades 3-8 students in the Wake County Public School System. Banks found that EOG test scores decreased as schools' poverty concentration increased. In terms of students' achievement growth, school poverty also had a small but significant negative effect on EOG test scores, but the magnitude of the effect varied across grades and subjects. Banks concluded that small changes in the concentration of poverty at a school (for example, from 35 to 40 percent) were unlikely to have a meaningful effect on students' achievement growth. Larger changes in the concentration of poverty (for example, from 5 to 40 percent) would probably produce significant changes in student achievement growth.
- Andrews and colleagues (2003) examined the impact of poverty on the achievement scores of grades K-8 students in 817 Louisiana public schools. The researchers used a composite of four dimensions of student performance: Louisiana Educational Assessment Program for the 21st Century (LEAP) test scores (grades 4 and 8); Iowa Test of Basic Skills test scores (grades 3, 5, 6, and 7); attendance (grades K-8); and dropout rate (grades 7 and 8). Analyses indicated that larger school sizes, larger community sizes, and higher concentrations of school poverty all had a negative impact on students' performance. Of all of the variables studied, however, poverty level was the most significant predictor of student performance. As schools' poverty concentrations increased, student performance decreased.
- In a study of fourth grade students in Wisconsin public schools, Rusk (2002) found that for every one percent increase in middle class students attending a school, low income students' test scores improved .64 percentage points in reading and .72 percentage points in math. Rusk calculated that the difference between attending a school with 45 percent middle class students and a school with 85 percent middle class students translated into a 20 to 32 percentage point improvement in low-income students' test scores. He also found that middle class students' test scores declined as the percentage of low income students in the school increased. Once schools enrolled over 60 percent low income students, both low and higher income students' test scores decreased significantly.
- Gottlieb (2002) reported on a study commissioned by The Piton Foundation that found low income students performed significantly better on standardized tests when they attended schools where fewer than 50 percent of the students were poor. The study analyzed the Colorado Student Assessment Program (CSAP) reading test scores of 13,245 grades 3-5 students from 89 Denver elementary schools. Over half (53 percent) of low income students scored at the proficient or advanced levels of the CSAP in schools where fewer than 25 percent of students were poor. However, in schools where over 75 percent of the students were poor, just 33 percent of the poor students scored at the proficient or advanced levels. The study also found that more affluent students received higher CSAP scores when they attended schools with low to moderate levels of poverty. Their scores began to decline significantly, however, as their schools' poverty concentrations increased. In schools where under 25 percent of students were poor, 83 percent of the more affluent students scored at the CSAP proficient or advanced levels, but in schools with over 75 percent poor students, only 49 percent of the more affluent students scored at the proficient or advanced levels.

- Using national data from the Early Childhood Longitudinal Study, Holod and Brooks-Gunn (2009) compared disadvantaged children who attended preschool and disadvantaged children who did not attend preschool. Although preschool attendees entered kindergarten with higher reading and math test scores than non-attendees, children who attended preschool and then enrolled in higher income elementary schools (defined as 25 percent or less low income students) received significantly higher reading and math test scores at the end of third grade than those who attended preschool and then enrolled in high poverty elementary schools. The researchers concluded that when the benefits of the preschool experience were combined with attendance at a higher income elementary school, the positive effects of the preschool program were long-lasting and appeared to be even larger at third grade than at kindergarten.
- Myers, Kim, and Mandala (2004) examined whether schools' poverty concentrations explained the differences between Black and White students' scores on the Minnesota Basic Standards Tests (MBST). Analyses were conducted on the MBST reading and math test scores of over 52,000 eighth grade students. In contrast to the studies reported above, these researchers found that schools' poverty concentrations had only a small impact on test scores. For example, they calculated that it would take a 10 percent reduction in school poverty concentration to produce a math test score gain of a little more than one-half of a percentage point among Black students; it would take a 20 percent reduction in school poverty to produce a math test score gain of 1.19 percentage points for Black students. A large and significant race effect remained even after the researchers controlled for both individual poverty and school poverty. The researchers concluded that school poverty did not explain the gap between Black and White students' test scores.
- Clark (2002) analyzed data from 459 students, their parents, and their teachers in five Nashville, Tennessee elementary schools. He found that family background (socioeconomic status and ethnicity) contributed relatively little to variations in students' test scores on the Tennessee Comprehensive Assessment Program (TCAP). Only 9 percent of the variation in TCAP reading scores was explained by family background, while over half (51 percent) of the variation was explained by school and family factors. These factors included the quality of instruction; teacher expectations for students; parental standards, beliefs, and expectations; teacher-parent communications; and students' time spent in high-yield activities (such as leisure reading, writing, studying, being tutored, working on hobbies, participating in community and school clubs and programs, working on the computer, watching educational television, volunteering, and playing organized sports). Clark concluded that the achievement gap between students from different income levels was most directly associated with variations in how students used their time (both in and out of school) and with the involvement of parents, teachers, and adult mentors in students' activities.

On a Local Note

Data collected within M-DCPS confirm the relationship between poverty and academic achievement discussed previously. This relationship holds at the student level as illustrated by the figure below and at the school level as shown in the figure, table, and pie charts that follow.

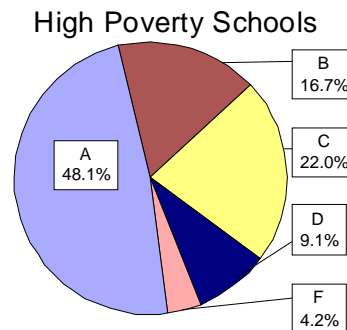
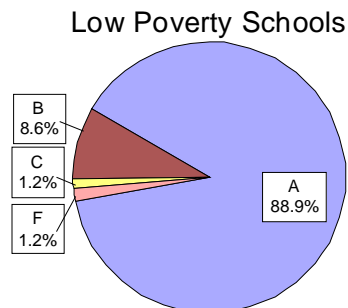
The graph depicts the relationship between 2008 FCAT Reading scores and the percentage of free and reduced-price lunch (FRL) for M-DCPS fifth grade students. These data indicate that as the proportion of FRL increases (denoting decreasing income), FCAT Reading scores decrease ($r=-.85$). Therefore, these local data confirm the findings discussed previously. A strong inverse relationship exists indicating that as the percentage of FRL increases in fifth grade classrooms, test scores decline.



At the school level, schools with a FRL rate of less than 50% (Low FRL Schools) achieve more A and B grades (98%) than do those schools with FRL rates exceeding 50% (High FRL Schools; 65%). Similarly, D and F grades are assigned less frequently to low FRL schools (1%) when compared to high FRL schools (13%).

School Poverty Level and State Performance Grades (2007-08)

Low Poverty Levels			High Poverty Levels		
Grade	Number	Percent	Grade	Number	Percent
A	72	88.9	A	138	48.1
B	7	8.6	B	48	16.7
C	1	1.2	C	63	21.9
D	0	0.0	D	26	9.1
F	1	1.2	F	12	4.2



How High Poverty Schools Can Become High Performing Schools

A growing body of research demonstrates that when high poverty schools undertake intensive improvement efforts, they can have a positive effect on student achievement. However, even the most well-designed and well-supported interventions rarely allow poor students to catch up to their more advantaged peers or meet the increasingly high standards for achievement required by state and federal accountability standards (Berliner, 2009; Reeves, 2009; Nelson, 2006; Center for Public Education, 2005a; Rowan et al., 2004).

Some schools with high concentrations of poverty have raised their students' levels of academic achievement. But no schools serving predominantly disadvantaged students have demonstrated consistent and sustained improvement that closes, not just narrows, the achievement gap (Rothstein, 2008; Kannapel & Clements, 2005; Tschinkel, 1999). Rothstein (2008) stated that claims of success at high poverty schools are often misleading, based on low income schools whose parents are unusually involved and well-educated; admissions policies accepting only the most gifted disadvantaged students; schools whose students, although eligible for subsidized lunches, come from stable working class, not poor, families; or high proportions of students scoring above state proficiency standards that have been defined at low levels.

Researchers agree that completely eliminating the pervasive effects of poverty on student achievement is outside of the reach of the public education system (Berliner, 2009; Nelson, 2006; Educational Research Service, 2001). However, they have identified some strategies that can help schools raise the achievement of their economically disadvantaged students.

- **Socioeconomic integration of schools.** An increasing number of school districts are redrawing attendance zones to reduce the economic disparities between schools. There is evidence that students are more likely to be successful in socioeconomically diverse schools in which the concentration of poverty is kept as low as possible. Research indicates that students' achievement declines sharply when a school's poverty concentration rises above 40 percent (Field et al., 2008; Kahlenberg, 2004; Gottlieb, 2002; Wake County Public School System, 1999). The University of North Carolina Center for Civil Rights (2005) pointed out that reducing poverty levels in the most disadvantaged schools results in higher poverty levels in other schools. They contend, however, that adding low income students to middle class schools has only a small impact on these schools' achievement levels. In addition, they note that socioeconomic integration often creates more racially and culturally diverse classrooms.
- **Rigorous curriculum.** Studies of high poverty schools show that they are most successful when the curriculum is rigorous and aligned to standards and assessment. Practices associated with high performance include well-defined plans for instructional improvement; setting measurable goals for students' academic growth; instructional consistency and curricular alignment within and between grades; and an emphasis on higher order skills in addition to the basic literacy and mathematical skills (Reeves, 2009; Bruce, 2008; Pellino, 2007; Center for Public Education, 2005a; Williams et al., 2005; Barton, 2004; Clark, 2002; Connect Ed, n.d.). Kannapel and Clements' (2005) study of eight high poverty, high performing elementary schools in Kentucky found that specific curricular and instructional strategies varied. The key appeared to be schools' consistent focus on student learning, not the particular curricular program used.
- **Cultural congruence in instruction.** Teachers must find ways to relate what they teach to their students' knowledge and experience. Students are less likely to learn content when it has no emotional relevance. When developing lessons and units, faculty must find topics that are relevant to students' lives and use varied and flexible instructional strategies that relate to students' interests and abilities (Bruce, 2008; Educational Research Service, 2001; Kovalik & Olsen, 1998).
- **Ongoing assessment.** High performing, high poverty schools use ongoing diagnostic assessment to improve curriculum and instruction, refine teaching strategies, and tailor instruction to students' individual

Reforms particularly relevant to high poverty schools:

- **Socioeconomic integration** to reduce economic disparities between schools.
- **Cultural congruence with instruction** so students can relate what they're learning to their own knowledge and experience.
- Greater availability of **advanced course work and career education**.
- **Smaller schools and classrooms** that provide students with personalized learning environments.
- Financial incentives that encourage **highly qualified teachers** to work in high poverty schools.
- Awareness of the culture of poverty and **sensitivity to the needs of children in poverty**.
- District wide and school-specific efforts to reduce **student mobility**.
- Activities designed to **involve parents** in their children's education and help them create home environments conducive to learning.
- **Preschool programs** that provide academic and nutritional enrichment.
- **Out-of-school programs**, including after-school, weekend, and summer programs to increase students' instructional time.
- **Extended school hours**, providing children and families with access to schools during early morning or evening hours.
- **Coordination with community agencies** for the delivery of health, welfare, social, and recreational resources and services.
- **School-based health centers** that provide students with basic medical and mental health services.
- **Nutritional programs** that ensure students have access to breakfast, lunch, and nutritious snacks.

needs (Reeves, 2009; Bruce, 2008; Center for Public Education, 2005a; Williams et al., 2005; Connect Ed, n.d.). Kannapel and Clements' (2005) study of eight high poverty, high performing elementary schools in Kentucky found that results from state accountability tests were used only as a starting point. Each of the schools had a system in place to regularly assess students' progress and adapt instruction to match individual student needs.

- **Advanced course work and career education.** The National Science Foundation (2006) reported that students attending high poverty schools are less likely to be offered advanced math and science courses. Several researchers have suggested that greater availability of advanced courses at high poverty schools has a positive impact on disadvantaged students' achievement. In addition, career and technical education programs that integrate academic and career-focused education can interest and motivate older disadvantaged students and help to reduce their dropout rates (Nelson, 2006; University of North Carolina Center for Civil Rights, 2005; Myers et al., 2004; Rumberger & Palardy, 2002).
- **Smaller schools and classrooms.** Studies have produced mixed results on the impact of school and classroom size on low income students' academic achievement. Howley and Bickel's (2000) study of approximately 13,600 public schools in Georgia, Montana, Ohio, and Texas suggested that school size may play a role in students' levels of academic achievement. Analysis of student performance on standardized, state-mandated achievement tests found that low income students attending smaller schools significantly outperformed low income students attending larger schools in three of the four states. In the fourth state, Montana, where most schools were small, students attending smaller schools outperformed students attending larger schools even when the smaller schools served poorer communities. Variations in schools' ethnic composition did not significantly alter the results in any of the four states.

In contrast to Howley and Bickel's findings, several other studies found that school size had little or no impact on low income students' academic performance. Both Tschinkel's (1999) analysis of students' test scores in seven Florida school districts (including Miami-Dade County) and Andrews and associates' (2003) study of student performance in over 800 Louisiana schools found that only a small proportion of test score differences were explained by school size. Similarly, Rumberger and Palardy (2002) found that after controlling for school size, schools' socioeconomic composition still had a significant impact on students' test scores.

Educational Research Service (2001) concluded that smaller class sizes can help narrow the achievement gap between high and low income students, although some studies have found that class size has little impact on student achievement. Howley and Bickel's (2000) study of poverty and student achievement in four states controlled for class size in Montana and Ohio. They found that class size had no significant impact on students' test scores in either state, although in Ohio at grades 4 and 6, smaller class sizes exerted a small additional influence in favor of higher achievement. Tschinkel's (1999) analysis of students' combined writing, reading, and math test scores in seven Florida school districts found that only a small proportion of test score differences were explained by class size.

Connect Ed (n.d.) stated that schools serving low income children are most successful when class sizes are based on students' needs, rather than predetermined numbers. Balfanz (2006) concluded that student performance improves when large, high poverty schools are organized into smaller, more personalized, community-based schools. Teams of skilled teachers should instruct a manageable number of students (no more than 75 to 90) and faculty should be provided with sufficient time and resources to offer students the instructional support they need.

- **Strong instructional leader.** Studies of high performing, high poverty schools have found that they are run by highly effective principals who encourage innovation and have a collaborative, non-authoritarian leadership style (Clewell & Campbell, 2007; Center for Public Education, 2005a; Kannapel & Clements, 2005). The Florida Office of Program Analysis and Government Accountability visited 27 high poverty

schools in five Florida school districts (Broward, Hillsborough, Leon, Miami-Dade, and Orange). They reported that principals at higher performing schools focused on instruction and student outcomes; demonstrated a strong commitment to accountability; closely monitored student performance; supported teachers and students; and provided a safe, orderly environment (Florida State Legislature, 1997).

- **Highly qualified teachers.** Research indicates that high quality teachers can help narrow the achievement gap (Clewell & Campbell, 2007; Center for Public Education, 2005b; Rumberger & Palardy, 2005; Educational Research Service, 2001). However, studies have found that poor schools tend to have the highest percent of teachers with three or fewer years of teaching experience; the highest percent of students taught by out-of-field teachers; the highest rates of teacher turnover; and the most difficulty hiring new teachers (Barton & Coley, 2009; University of North Carolina Center for Civil Rights, 2005; Barton, 2004; Kahlenberg, 2004; Whitmire, 1997; Lippman et al., 1996).

Researchers have concluded that high performing, high poverty schools assign teachers based on their strengths, not on seniority or preference; provide teachers with continuing high quality professional development; and offer new teachers non-evaluative instructional support (Bruce, 2008; Balfanz, 2006; Center for Public Education, 2005a; Kannapel & Clements, 2005; Connect Ed, n.d.). Some experts believe that school districts should offer financial incentives that encourage the most qualified teachers to work in high poverty schools (Field et al., 2008; Kahlenberg, 2004).

- **Sensitivity to the needs of children in poverty.** Most teachers come from middle class backgrounds with middle class values and don't understand that many children raised in poverty have a culture and value system much different than their own. Teachers need to be aware of the culture of poverty and sensitive to the needs that children of poverty bring to the classroom (Pellino, 2007; Payne, 2001). Pena (1998) stated that training for administrator and teacher effectiveness must include strategies for learning about the community and its past. He observed that "considerable mystery and ignorance about impoverished communities exists in schools. Poor students and families are seen as abstractions."
- **Collaboration.** In successful high poverty schools, teachers collaborate across grade levels and all areas of the curriculum to provide each other with support and to ensure that students receive the best possible instruction. Teachers share successful practices, address barriers to learning, identify solutions, and take part in school wide intervention strategies (Balfanz, 2006; Center for Education, 2005a; Kannapel & Clements, 2005; Connect Ed, n.d.).
- **High expectations.** Visits to high performing, high poverty schools have found that faculty and staff have high expectations for all students and share a strong belief that every student can succeed academically. Principals hold high expectations for faculty and staff, who in turn hold high expectations for themselves and their students (Clewell & Campbell, 2007; Pellino, 2007; Center for Public Education, 2005a; Kannapel & Clements, 2005; Educational Research Service, 2001; Connect Ed, n.d.).
- **Professional responsibility.** Schools serving children from high poverty backgrounds have been found to be most successful when faculty and staff believe that student learning is their responsibility and accept their professional role in each student's success or failure (Kannapel & Clements, 2005; Connect Ed, n.d.).
- **Safe and disciplined environment.** Safety and discipline problems are more prevalent in high poverty schools (Wake County Public School System, 1999; Florida State Legislature, 1997). Studies have found that schools are better able to educate children when they are safe and orderly and when staff offer students emotional support and encouragement (Center for Public Education, 2005a; Kannapel & Clements, 2005; Barton, 2004; Myers et al., 2004). Pellino (2007) suggested that since many poor children live in high stress environments, teachers should challenge students academically while maintaining low-stress classroom climates.

- **Student mobility.** High poverty schools have about double the mobility rate of low poverty schools. To help reduce mobility rates, school districts should be flexible with school boundaries. Districts should also cooperate with each other to support transferring students. In addition to these large-scale efforts, school staff should encourage parents to refrain from moving until the end of the school year or to provide transportation so their children can finish the year in their school (Myers et al., 2004; Rumberger, 2002; Florida State Legislature, 1997).
- **Parent involvement.** Staff at high poverty schools should improve communications with disadvantaged parents and help them create home environments conducive to learning (Field et al., 2008; Pellino, 2007; Center for Public Education, 2005a; Kannapel & Clements, 2005; Barton, 2004). Parental involvement in school activities is strongly related to income. In a national survey, 59 percent of American parents above the poverty line reported they were involved in three or more school activities on a regular basis, compared to 36 percent of parents below the poverty line (U.S. Department of Health and Human Services, 1999). Low income parents tend to volunteer less, attend school functions infrequently, and be less attentive to homework compared to middle and upper income parents (Clewell & Campbell, 2007; Evans, 2004). Low levels of parental involvement are not due to a lack of concern but to barriers that make it difficult for parents to participate in their children's education, including limited time, limited financial resources, cultural obstacles, and fewer educational skills (Florida State Legislature, 1997).

Because relationships with low income parents are often the most difficult to cultivate, school staff need to make extra efforts to involve them in their children's education (Pellino, 2007). Butler (2006) noted that families trust school personnel more than staff from any other government agency. Activities that can increase home-school collaboration include (Pellino, 2007; Butler, 2006; Myers et al., 2004; Clark, 2002; Florida State Legislature, 1997):

- provide parents with reports about their children's performance and academic progress;
 - keep parents informed about classroom topics and activities through monthly newsletters and calendars;
 - conduct home visits to show parents how to help their children with homework and to provide school supplies, such as books, flash cards, and other materials relevant to the subject with which their children might be struggling;
 - provide parents with literature and articles on parenting issues and home conditions that support learning;
 - schedule activities that involve parents in their children's education, such as family math or reading nights;
 - when scheduling school conferences, meetings, and activities: hold events at community centers or locations easily accessible to families without transportation, provide child care, schedule events at convenient times for parents, and provide food;
 - encourage parents to visit their children's classrooms and view their work so they become more familiar with their abilities and talents;
 - provide parent education and training classes, such as GED and literacy courses;
 - leave schools open at night and on weekends to provide parents with a place to help their children with homework and engage in other learning activities;
 - organize parent patrols to increase school safety;
 - provide language translators at schools; and
 - provide referral information to connect families to health, nutrition, and other community services.
- **Preschool programs.** Researchers have noted that since the achievement gap between poor children and their more affluent peers is already large by the time they enter kindergarten, preschool programs are the most important investment schools can make. Children who attend preschool demonstrate higher levels of academic achievement and social skills, yet only 20 percent of low income kindergarteners are likely to have attended, compared to 65 percent of higher income kindergarteners (Berliner, 2009; American Association of School Administrators, 2008; Field et al., 2008; Nelson, 2006; Rothstein, 2006; Lee & Burkam, 2002). Holod and Brooks-Gunn (2009) compared disadvantaged children who attended preschool and disadvantaged children who did not attend preschool. They found that students who attended preschool received higher reading and math test scores upon their entry into kindergarten.

Preschool programs should provide academic and nutritional enrichment that parallels the middle class experience. Professional care givers, low child-adult ratios, developmentally appropriate curricula, parental involvement, and links to the public schools children will later attend are widely documented elements of quality programs (Nelson, 2006).

- **Out-of-school programs.** The negative effects of poverty can be moderated through students' participation in out-of-school programs. Researchers have found that high performing, high poverty schools consistently find ways to increase their students' instructional time. In addition to after-school, weekend, and summer school programs, these schools provide disadvantaged students with tutoring and extra instructional support. After-school homework clubs are another way schools can provide a constructive environment for those students who have little or no educational support at home (Berliner, 2009; Field et al., 2008; Center for Public Education, 2005a; University of North Carolina Center for Civil Rights, 2005).
- Summer programs appear to be especially effective in closing the achievement gap. Studies suggest that poor children don't grow academically during the summer as much as middle class children. Researchers have found that approximately half of the achievement gap between children from higher and lower income families at the start of high school is due to the cumulative lack of summer gains among lower income children (Berliner, 2009; Rothstein, 2006; Educational Research Service, 2001).

Program elements associated with the most successful out-of-school programs include a strong educational component, smaller class sizes, one-on-one tutoring or individualized instruction, a requirement for some form of parental involvement, and the provision of medical and social supports for disadvantaged children. Out-of-school programs for disadvantaged children should mirror the experiences middle class children typically have in their non-school hours. Activities can include organized sports, outdoor recreation, museum visits, field trips, and recreational reading (Berliner, 2009; Rothstein, 2006; Kannapel & Clements, 2005).

- **Extended school hours.** Several researchers have recommended that schools remain open and accessible to children and their families during evening or early morning hours so they have safe, quiet places to study and access to computers, libraries, and recreational and athletic facilities (Pellino, 2007; Florida State Legislature, 1997).
- **Coordination with the community for needed health and social services.** Schools should develop a support network with community agencies that can provide students and families with needed health, welfare, social, and recreational resources and services (American Association of School Administrators, 2008; Pellino, 2007; Kannapel & Clements, 2005; Rowan et al., 2004; Pena, 1998). The Long Beach Unified School District (LBUSD), for example, partnered with nine community counseling agencies to provide additional counseling services to low income students attending 60 of the district's schools. In addition, LBUSD social workers referred families to a children's clinic for medical care, a local chapter of the Lions Club for eyeglasses, Operation School Bell for uniforms and clothing, and Catholic Charities for shelter (Butler, 2006). In Las Vegas, Whitney Elementary School contacted community agencies to help needy students. Operation School Bell provided clothing and classroom supplies and several local organizations delivered backpacks of nutritious snacks. The school received donated goods and services from community members, businesses, and agencies, including toys for holidays, eye examinations, hearing tests, and hair stylists to cut students' hair. Several low income mothers were hired to work in the front office and cafeteria (Richmond, 2008).
- **Resource teams.** Some schools form resource teams, comprised of teachers, administrators, school psychologists, counselors, and social workers, to address factors that may be impeding low income students' academic performance. Staff build a rapport with low income families and become liaisons between parents and the school. In addition to the support teachers provide in the classroom, psychologists and counselors offer advice and guidance to children and their parents. Social workers visit homes and connect parents and their children to needed services (Butler, 2006).

- **School-based health care.** Schools that serve children living in poverty are more likely to have students with untreated medical problems. School-based health centers provide a range of medical and mental health services to children, including basic pediatric care, vision screening, and dental exams. The centers should be located on school premises and can be supported by funds from grants, foundations, and reimbursements from public and private health insurance (Rothstein, 2008; Nelson, 2006).

Nationwide, there is one school nurse for every 1,151 students and about 25 percent of American schools don't even have a nurse. Schools serving disadvantaged students are more likely to have no school nurse or the highest ratios of students to nurses. Berliner (2009) urged all schools to employ school nurses at the federally recommended level of one nurse per 750 students.

- **Nutrition programs.** A broad spectrum of professionals, such as psychologists, nutritionists, and physicians agree there is strong evidence that nutrition is linked to school behavior and achievement (Berliner, 2009). When nutrition is poor, children have difficulty concentrating on their studies. Schools should ensure that students have access to breakfast and lunch programs, as well as nutritious snacks (Pellino, 2007; Brooks-Gunn & Duncan, 1997).

Summary

Nationwide and in Miami-Dade County, significant numbers of children live in poverty. Their numbers continue to rise as the economy weakens and unemployment and foreclosure rates increase. Childhood poverty presents serious problems for public education. These children enter school with a host of physical, behavioral, and social problems and significantly lower levels of achievement. Factors that are beyond schools' control but have a negative influence on low income students' academic performance include a higher incidence of illness and injury, nutritional problems, residential instability, and a lack of educational activities and materials in the home. Researchers agree that completely eliminating the pervasive effects of poverty on student achievement is outside of the reach of the public education system.

This Information Capsule reviewed studies conducted on the relationship between poverty and student achievement, including the effects of both individual poverty and school poverty concentration on academic performance. Research as far back as the 1960s has indicated that low income students tend to have significantly lower levels of academic achievement than their more affluent peers. The number of disadvantaged students attending a school also affects student performance. All students, whether lower, middle, or upper income, have lower levels of achievement when they attend schools with high poverty concentrations. Data collected within M-DCPS confirmed that as poverty concentrations in the District's elementary schools increase, FCAT scores decline. In addition, low poverty M-DCPS schools received more A and B performance grades and fewer D and F grades than high poverty M-DCPS schools. There is some evidence that certain school characteristics, such as high teacher expectations, a safe environment, and time spent in constructive activities both in and out of school, may help to close the achievement gap between high and low poverty schools. Finally, strategies that can help schools raise low income students' achievement levels are summarized, such as hiring and retaining highly qualified teachers, maintaining a safe and disciplined environment, involving and educating parents, providing preschool programs, and coordinating with community agencies for the delivery of needed health and social services.

All reports distributed by Research Services can be accessed at <http://drs.dadeschools.net>.

References

- Abramson, L. (2009). Amid Foreclosures, A Rise in Homeless Students. *National Public Radio*, April 3, 2009.
- Adamsick, C. (2009). *Schools Struggle to Help Homeless Students*. Global Envision, Portland, OR. Retrieved from <http://www.globalenvision.org/2009/03/06/rising-tide-homelessness>.
- American Association of School Administrators. (2005). Latest AASA Polling Findings, Unexpected Results. *The Leader's Edge*, September 30, 2005. Retrieved from <http://www.aasa.org/publications/LeadersEdgeArticle.cfm?ItemNumber=3097>.
- American Association of School Administrators. (2008). *The Total Child Needs Our Attention*. Retrieved from http://www.aasa.org/files/PDFs/Policy/EducatingTotalChild_FINAL.pdf.
- Anderson, J., Hollinger, D., & Conaty, J. (1992). *Poverty and Achievement: Reexamining the Relationship Between School Poverty and Student Achievement*. Paper presented at the Annual Meeting of the American Educational Research Association, San Francisco, CA, April 1992. ERIC Document Reproduction Service No. ED346207.
- Andrews, D.R., Washington, A., Yigletu, A., & Nwachukwu, S. (2003). Influence of Poverty on Educational Performance in Louisiana: Emphasis on the Mississippi Delta Parishes. *Southwestern Economic Review, Southwest Economic Proceedings*, 30, 35-44.
- Balfanz, R. (2006). *Why Are Achievement Gains So Difficult to Realize in High Poverty Middle Grade Schools? What Can Be Done About It?* Presentation at National Policy Symposium on Middle-Level Education: Where Do We Go From Here? Washington, DC, September 2006. Retrieved from http://www.all4ed.org/files/Balfanz_AllianceED.ppt.
- Banks, K. (2001). *The Effect of School Poverty Concentration in WCPSS*. Evaluation and Research Department, Wake County Public School System, Raleigh, NC. ERIC Document Reproduction Service No. ED454290.
- Barton, P.E. (2004). Why Does the Gap Persist? *Educational Leadership*, 62(3), 8-13.
- Barton, P.E., & Coley, R.J. (2009). *Parsing the Achievement Gap II*. Educational Testing Service, Princeton, NJ. Retrieved from <http://www.ets.org/Media/Research/pdf/PICPARSINGII.pdf>.
- Becker, H.J. (2000). Who's Wired and Who's Not: Children's Access to and Use of Computer Technology. *The Future of Children*, 10, 44-75.
- Berliner, D.C. (2009). *Poverty and Potential: Out-of-School Factors and School Success*. Education Policy Research Unit, Arizona State University, Tempe, AZ. Retrieved from <http://epicpolicy.org/files/PB-Berliner-NON-SCHOOL.pdf>.
- Bracey, G. (1999). *Poverty Issues Get Short Shrift in Today's Education Debate*. Center for Education Research, Analysis, and Innovation, University of Wisconsin-Milwaukee. Retrieved from <http://epicpolicy.org/files/cerai-00-04.htm>.
- Brooks-Gunn, J., & Duncan, G.J. (1997). The Effects of Poverty on Children. *The Future of Children*, 7(2), 55-71.

- Bruce, C.A. (2008). Countering the Effects of Poverty on Students. *National Association of Elementary School Principals Diverse Learning Communities Today*, 1(1), 1-2.
- Butler, K. (2006). Reaching Out to Students in Poverty. *Press Telegram*, Long Beach, CA. Retrieved from http://www.presstelegram.com/poverty/ci_4682991.
- Center for Public Education. (2005a). *Research Review: High-Performing, High-Poverty Schools*. Retrieved from <http://www.centerforpubliceducation.org>.
- Center for Public Education. (2005b). *Key Lessons: High-Performing, High-Poverty Schools*. Retrieved from <http://www.centerforpubliceducation.org>.
- Clabaugh, G.K. (2007). Power Failure: Why U.S. School Reform Persistently Misses the Mark. *Educational Horizons*, 85(4), 205-209.
- Clark, R. (2002). *In-School and Out-of-School Factors That Build Student Achievement: Research-Based Implications for School Instructional Policy*. North Central Regional Educational Laboratory. Retrieved from <http://www.ncrel.org/gap/clark/index.html>.
- Clewell, B.C., & Campbell, P.B. (2007). *Good Schools in Poor Neighborhoods: Defying Demographics, Achieving Success*. Baltimore, MD: Urban Institute Press.
- Coleman, J. (1966). Equality of Educational Opportunity, National Center for Educational Statistics, Report No. OE-38001, Washington, D.C.
- Connect Ed. (n.d.). *Research on Closing the Achievement Gap Between High and Low Socioeconomic Status (SES) Students*. Retrieved from http://connectcenter.net/message_center/uploads/82/70.pdf.
- Dahl, G., & Lochner, L. (2008). *The Impact of Family Income on Child Achievement: Evidence from the Earned Income Tax Credit*. University of California, San Diego, University of Western Ontario, and National Bureau of Economic Research. Retrieved from <http://dss.ucsd.edu/~gdahl/children-and-EITC.pdf>.
- Daniel, T. (2009). Number of South Florida Homeless Students on the Rise. *Miami Herald*, February 13, 2009.
- Douglas-Hall, A., & Chau, M. (2008). *Basic Facts About Low-Income Children Birth to Age 18*. National Center for Children in Poverty, Mailman School of Public Health, Columbia University, New York, NY. Retrieved from http://www.nccp.org/publications/pdf/text_845.pdf.
- Duffield, B., & Lovell, P. (2008). *The Economic Crisis Hits Home: The Unfolding Increase in Child and Youth Homelessness*. National Association for the Education of Homeless Children and Youth. Retrieved from <http://www.naehcy.org/dl/TheEconomicCrisisHitsHome.pdf>.
- Duncan, G.J., Yeung, W., Brooks-Gunn, J., & Smith, J.R. (1998). How Much Does Childhood Poverty Affect the Life Chances of Children? *American Sociological Review*, 63(3), 406-423.
- Educational Research Service. (2001). *What Can Schools Do to Reduce the Achievement Gap?* Retrieved from <http://www.ers.org/otsp/otsp3.htm>.
- Evans, G.W. (2004). The Environment of Childhood Poverty. *American Psychologist*, 59(2), 77-92.

- Federal Interagency Forum on Child and Family Statistics. (2000). *America's Children: Key National Indicators*. Washington, DC.
- Field, S., Kuczera, M., & Pont, B. (2008). *No More Failures: Ten Steps to Equity in Education*. Organisation for Economic Co-operation and Development.
- Florida State Legislature. (1997). *A Report on Improving Student Performance in High-Poverty Schools*. ERIC Document Reproduction Service No. ED427136.
- Gottlieb, A. (2002). Economically Segregated Schools Hurt Poor Kids, Study Shows. *The Term Paper*, 1(2), 1-2, 5-6.
- Hampden-Thompson, G., & Johnston, J.S. (2006). *Variation in the Relationship Between Nonschool Factors and Student Achievement on International Assessments*. U.S. Department of Education, National Center for Education Statistics, Washington, DC.
- Herndon, M. (2009). Rise in Homeless Students Becoming a National Concern. *The Signal*, Georgia State University, Atlanta, GA, March 24, 2009.
- Holod, A., & Brooks-Gunn, J. (2009). *New Findings Link the 'Fade-Out' Phenomenon to High-Poverty Schools*. Unpublished work. Reported in Guernsey, L., The Early Ed Watch Blog. Retrieved from <http://www.newamerica.net/blog/early-ed-watch/2009/new-findings-link-fade-out-phenomenon-high-poverty-schools-11749>.
- Howley, C.B., & Bickel, R. (2000). *When It Comes to Schooling...Small Works: School Size, Poverty, and Student Achievement*. Rural School and Community Trust, Randolph, VT. ERIC Document Reproduction Service No. ED447973.
- Huus, K. (2009). 'Tidal Wave' of Homeless Students Hits Schools. *MSNBC*. Retrieved from <http://www.msnbc.msn.com/id/29356160>.
- Kahlenberg, R.D. (2004). *Economic School Integration: An Update*. Washington, DC: The Century Foundation Issue Brief Series.
- Kannapel, P.J., & Clements, S.K. (2005). *Inside the Black Box of High-Performing High-Poverty Schools*. A Report from the Prichard Committee for Academic Excellence, Lexington, KY. Retrieved from <http://www.cdl.org/resource-library/pdf/FordReportJE.pdf>.
- Kingsbury, K. (2009). Keeping Homeless Kids in School. *Time Magazine*, March 23, 2009.
- Kovalik, S., & Olsen, K. (1998). How Emotions Run Us, Our Students, and Our Classrooms. *NASSP Bulletin*, 82(598), 29-37.
- Lee, V.E., & Burkam, D.T. (2002). *Inequality at the Starting Gate: Social Background Differences in Achievement as Children Begin School*. Washington, DC: Economic Policy Institute. Retrieved from <http://epsl.asu.edu/epru/articles/EPRU-0603-138-OWI.pdf>.
- Lemann, N. (2000). *The Big Test: The Secret History of the American Meritocracy*. New York, NY: Farrar, Straus and Giroux Publishers Publishers.
- Levin, B. (2007). Schools, Poverty, and the Achievement Gap. *Phi Delta Kappan*, 89(1), 75-76.

- Levy, D., & Duncan, G.J. (2000). *Using Sibling Samples To Assess the Effect of Childhood Family Income on Completed Schooling*. Joint Center for Poverty Research Working Paper 168. ERIC Document Reproduction Service No. ED452298.
- Lippman, L., Burns, S., & McArthur, E. (1996). *Urban Schools: The Challenges of Location and Poverty*. Washington, DC: U.S. Department of Education, Office of Educational Research and Improvement. Retrieved from <http://nces.ed.gov/pubs/96184all.pdf>.
- Moreland, K., Wing, S., Diez-Rioux, A., & Poole, C. (2002). Neighborhood Characteristics Associated with the Location of Food Stores and Food Service Places. *American Journal of Preventative Medicine*, 22, 23-29.
- Morris, P., Duncan, G.J., & Rodrigues, C. (2004). *Does Money Really Matter? Estimating Impacts of Family Income on Children's Achievement with Data from Random-Assignment Experiments*. MDRC and Northwestern University. Retrieved from <http://www.northwestern.edu/ipr/publications/papers/2004/duncan/1doesmoneymatter.pdf>.
- Myers, S.L., Kim, H., & Mandala, C. (2004). The Effect of School Poverty on Racial Gaps in Test Scores: The Case of the Minnesota Basic Standards Tests. *Journal of Negro Education*, 73(1), 81-98.
- National Science Foundation. (2006). *Science and Engineering Indicators 2006*. Retrieved from <http://www.nsf.gov/statistics/seind06/toc.htm>.
- Nelson, A. (2006). Overcoming the Income Gap. *Association for Supervision and Curriculum Development Info Brief*, Issue 47, Fall 2006. Retrieved from <http://www.ascd.org/publications/newsletters/infobrief/fall06/num47/toc.aspx>.
- Payne, R.K. (2001). *A Framework for Understanding Poverty*. Highlands, TX: aha Process, Inc.
- Pellino, K.M. (2007). *The Effects of Poverty on Teaching and Learning*. Retrieved from <http://www.teach-nology.com/tutorials/teaching/poverty>.
- Pena, R.A. (1998). *How Public Middle Schools Serve Poor Students: An Analysis of Community Need and Perceptions of Principal and Middle School Effectiveness*. ERIC Document Reproduction Service No. ED424621.
- Reeves, D.B. (2009). *Uncovering the "Secrets" of High Poverty, High Success Schools*. Retrieved from <http://www.teachersofcolor.com/2009/04/uncovering-the-secrets-of-high-poverty-high-success-schools>.
- Renchler, R. (1993). Poverty and Learning. *ERIC Digest Number 83*. Retrieved from <http://www.ericdigests.org/1993/poverty.htm>.
- Richmond, E. (2008). School Goes All Out to Help Poor Kids Learn. *Las Vegas Sun*, June 3, 2008. Retrieved from <http://www.lasvegassun.com/news/2008/jun/03/school-goes-all-out-help-poor-kids-learn>.
- Rothstein, R. (2006). *The Social and Economic Realities that Challenge All Schools*. National Association of Independent Schools. Retrieved from <http://www.nais.org/publications/ismagazinearticle.cfm?ItemNumber=148102>.
- Rothstein, R. (2008). Whose Problem is Poverty? *Educational Leadership*, 65(7), 8-13.

- Rowan, B., Cohen, D.K., & Raudenbush, S.W. (2004). *Improving the Educational Outcomes of Students in Poverty Through Multidisciplinary Research and Development*. Retrieved from <http://www.isr.umich.edu/carss/about/Prospectus.pdf>.
- Rumberger, R.W. (2002). Student Mobility and Academic Achievement. *ERIC Digest*, ERIC Clearinghouse on Elementary and Early Childhood Education, Champaign, IL. Retrieved from <http://www.ericdigests.org/2003-2/mobility.html>.
- Rumberger, R.W., & Palardy, G.J. (2005). Does Resegregation Matter? The Impact of Social Composition on Academic Achievement in Southern High Schools. *Teachers Record*, 107(9), 1999-2045.
- Rusk, D. (2002). *Classmates Count: A Study of the Interrelationship Between Socioeconomic Background and Standardized Test Scores of 4th Grade Pupils in the Madison-Dane County Public Schools*. Retrieved from <http://www.schoolinfosystem.org/archives/Unifiedfinalreport.pdf>.
- Smith, J.R., Brooks-Gunn, J., & Klebanov, P. (1997). The Consequences of Living in Poverty for Young Children's Cognitive and Verbal Ability and Early School Achievement. In G.J. Duncan & J. Brooks-Gunn (Eds.), *Consequences of Growing Up Poor*. New York: Russell Sage Foundation.
- Tschinkel, W.R. (1999). *A Missing Piece in the Debate on School Performance*. Retrieved from http://bio.fsu.edu/school_performance/Miami-Herald.html.
- U.S. Census Bureau. (2006). *American Community Survey*. Retrieved from <http://www.census.gov/acs/www>.
- U.S. Department of Education. (2003). *The Condition of Education*. National Center for Education Statistics.
- U.S. Department of Health and Human Services. (1999). *Trends in the Well Being of America's Children and Youth 1999*. Washington, DC: U.S. Government Printing Office.
- University of North Carolina Center for Civil Rights. (2005). *The Socioeconomic Composition of the Public Schools: A Crucial Consideration in Student Assignment Policy*. University of North Carolina at Chapel Hill. Retrieved from <http://www.law.unc.edu/documents/civilrights/briefs/charlottereport.pdf>.
- Wake County Public School System. (1999). *The Impact of Poverty Upon Schools*. Research Watch Series, Report 99.20, Evaluation and Research Department, Raleigh, NC.
- Whitmire, R. (1997). Poor Students More Likely To Have Less Qualified Teachers. *Detroit News*, August 1, 1997.
- Williams, T., Kirst, M., Woody, E., Levin, J., Perry, M., Haertel, E., et al. (2005). *Similar Students, Different Results: Why Do Some Schools Do Better? A Large-Scale Survey of California Elementary Schools Serving Low-Income Students*. Mountain View, CA: EdSource.

