Reforms that could help narrow the achievement gap

School integration, and Sen. Moynihan's call for making choices

Public discourse about education pays great attention to the stubborn persistence of a black–white test score gap, and public schools come under great criticism for their apparent inability to do much to close it. Some of this criticism may be entirely justified. But what this book has tried to suggest is that there is more to the story than school reform. No society can realistically expect schools alone to abolish inequality. If students come to school in unequal circumstances, they will largely, though not entirely, leave schools with unequal skills and abilities, in both cognitive and non-cognitive domains. This is not a reason for educators to throw up their hands. Rather, along with efforts to improve school practices, educators, like students they try to prepare, should exercise their own rights and responsibilities of citizenship to participate in redressing the inequalities with which children come to school.

Income is more unequal and lower-class families have less access to medical care here than in any other industrial nation. The gap in average achievement can probably not be narrowed substantially as long as the United States maintains such vast differences in socioeconomic conditions. Although some lower-class children can overcome these handicaps, and although more effective schools can help narrow the gap a little, it is fanciful to think that, no matter how much schools improve, children from such different social classes can emerge at age 18 with comparable academic abilities, on average.

It is also fanciful to think that, 50 years after the Supreme Court's school desegregation decision, the country can ignore growing segre-

gation by race and social class. It has become fashionable to claim that if children attend good schools, they can succeed no matter who sits next to whom. Yet anyone with children knows that peers are influential. A striking finding of the Coleman report was that who sits next to whom does matter. Ambitions are contagious; if children sit next to others from higher social classes, their ambitions grow. This finding has been reconfirmed often.[309] Lower-class children achieve less if the share of low-income children in their schools is higher. The drop is most severe when the subsidized lunch population exceeds 40%.[310] This truth has not changed since *Brown vs. Board of Education,* but we Americans are apparently unwilling to consider the housing, transportation, zoning, and other urban policies that would permit families of different classes to live in close proximity so their children can attend the same neighborhood schools.

One of the great impediments to effective policies that might enhance more equal outcomes between children of different social class backgrounds is the tendency of educators to think only about school reforms. In reality, however, for lower-class families, low wages for working parents with children, poor health care, inadequate housing, and lack of opportunity for high-quality early childhood, after-school and summer activities are all educational problems. When a parent's earned income falls, or a parent loses a job, there are educational consequences for their children. Educators who are concerned about the educational consequences should not fail to take notice of the economic and social conditions that cause poor school performance. As citizens who are more informed about these matters than most others, educators should not hesitate to call attention to the consequences for children's achievement of the social and economic hardships their families may suffer.

One of the most insightful 20th century analysts of education and social policy was the late Senator Daniel P. Moynihan. A few years after the Coleman report was issued in 1966, Mr. Moynihan was President Richard Nixon's domestic policy advisor. Marshall Smith (who many years later served as under-secretary of education in the Clinton administration) recalls getting a telephone call from the White House in 1969 or 1970. Having considered the implications of the Coleman report, Mr. Moynihan "asked me whether I would rather put $1,000 into a family to cover one year of [an educational program like] Head Start for one of its children or put $1,000 into that family to buy food, clothing, and shelter by means of a negative income tax. I conveniently ducked the question by saying I would do both."[311]

Yet public budgets are not unlimited, and smart policy requires making choices and setting priorities. Americans have continued to duck the Moynihan question since he posed it to Marshall Smith 35 years ago. We should stop doing so. We can make big strides in narrowing the student achievement gap, but only by directing greater attention to economic and social reforms that narrow the differences in background characteristics with which children come to school.

After serving in the White House, Mr. Moynihan went to Harvard where, together with Professor Frederick Mosteller, he convened a seminar to consider the Coleman report and its implications. In their summary of that seminar, Moynihan and Mosteller wrote that the Coleman report had been widely misinterpreted as a conservative document by those who noticed only its finding that differences between schools had relatively little impact on the variation of student achievement, and who concluded that, therefore, there was little to be done. But Moynihan and Mosteller countered that the report was actually quite radical, because it directed attention toward the social and economic policy initiatives that could make a big difference in raising the academic achievement of lower-class children.[312] It is this radical conclusion that educators should embrace if they truly hope to narrow the achievement gap.

If the nation can't close the gaps in income, health, and housing, there is little prospect of equalizing achievement. Yet there are policies that could help, if not to close the achievement gap fully, then to narrow it. If the achievement distributions of blacks and whites could be pushed closer together, more black students could use education to climb above their parents' stations. More black students could be recruited by affirmative action teachers and programs like Rafe Esquith, KIPP, and AVID, and the elites of our society might become more diverse.

Without more experiments where we compare, for example, the relative effects of reducing class size or establishing a vision clinic, spending money on recruiting better teachers or investing in housing, allowing children to transfer to "better" schools or supporting their parents' incomes so they can move to "better" neighborhoods, it is inevitable that we will continue to duck the Moynihan question.

In the absence of good experiments, citizens and policy makers have to make judgments based on a review of the literature, their own experi-

ence, and their good judgment. Although I remain open to contrary evidence, this book argues that efforts to truly enhance lower-class children's opportunities do not seem to be primarily regular school reforms, although those, too, can help. The discussion in Chapter 2 showed why it is false to claim that higher standards, more testing and accountability, and better school leadership can close the achievement gap. However, although these school reforms cannot close the gap, they may be able to narrow it some; by how much remains to be determined. This book does not discuss the importance of these school reforms in detail, only because most education writing nowadays focuses exclusively on such reforms within the regular elementary and secondary school system. This book has nothing to add to these recommendations, some of which are excellent. Rather, the goal here is to direct attention to reforms that are less-often promoted but that are at least as important, if not more so, than reforms in the organization and conduct of regular schools.

Although there is little practical hope that Americans will make a realistic commitment to close the achievement gap between lower- and middle-class children in the present political environment, incremental steps can certainly be taken in that direction. The most important steps, however, are probably not those that are currently most fashionable, among either liberal or conservative school reform advocates. More money to raise teacher salaries and smaller class sizes may be good ideas, but they are unlikely, by themselves, to make a big dent in the achievement gap. And they will especially not make a dent if they are implemented for all students and not targeted only for lower-class students.[313] Yet, as discussed above, it is politically unrealistic to expect middle-class voters to support reforms that transfer good teachers from schools serving middle-class children to those serving lower-class children, or that reduce class sizes in lower-class schools so that they are substantially smaller than those in middle-class schools.

There is no certain way to decide, if incremental reform is on the agenda, what changes would be more important than others. But, after considering the causes of low achievement that were described in this book, educators and policy makers may reconsider what reforms to begin with, if a choice were offered. While careful to insist that the achievement gap will not be closed without all the necessary reforms being implemented, what follows are some ways that the process might begin and how the gap might be narrowed.

Income inequality

Low-income families have seen their incomes grow far less than those of middle- and upper-income families in recent years. As a result, there are too many families with inadequate incomes to provide security for their children. Doing something about the wide income gap between lower- and middle-class parents could be one of the most important educational reforms we could consider.

In terms of national income distribution, the lowest fifth of families with children saw their after-tax incomes decline by 1.2% per year from 1979 to 1989. These families had gains in the early 1990s (up 2.5% annually from 1989 to 1995), largely because of improvements in the earned income tax credit in those years. But after-tax income growth for these low-income families was just 1.1% per year in the boom of the late 1990s. Then the recession hit, and it reduced their incomes by 5.8% from 2000 to 2002.[314] Consequently, over the entire 1979-2002 period, the after-tax incomes of the lowest fifth of families with children rose by just 2.3%, and, during much of this period, these families' already-low incomes were declining, placing them (including their children) under extraordinary stress.

In contrast, comparable middle-income families saw their after-tax incomes rise by 17% during this period, even after considering a 3% decline in the recent recession.[315] Thus, the last few decades have seen a widening income gap between those in the bottom and those in the middle.

A more positive development is that the ratio of black to white median family income increased from 57% a quarter century ago to about 64% today. This still leaves black family incomes far behind those of whites. The ratio of black to white median family wealth has improved at an even greater rate, from 7% to 12%. Yet these trends still leave a far greater disparity in wealth than in income.

Many families with children in the bottom of the income distribution, especially minority families, have incomes that are too low to adequately support children. In 2000, at the end of the 1990s boom, 11% of Americans had incomes below the poverty line, no different from the poverty rate of over 30 years ago, in 1973.[316] The racial disparity in poverty rates has diminished, as black poverty has dropped from 31% in 1973 to 23% in 2000, while the white poverty rate has risen from 8%

to 10%. This still leaves the black poverty rate more than twice as great as the rate for whites. Moreover, a third (33%) of black children under the age of 6 were poor in 2000, as compared to 13% of young white children.[317]

According to many researchers, the official poverty line (roughly $18,000 for a family of four in 2001) sets too low a threshold to describe the income families need to assure minimal stability. A more realistic basic family budget is probably about twice the poverty line. Using such a standard, half of all black families and one-fifth of all white families had inadequate incomes in the late 1990s.[318]

If Americans truly want to narrow the black–white achievement gap and to narrow the gap between all lower- and middle-class children, supporting the incomes of low-wage parents can make an important contribution. In real dollars, the value of the minimum wage has plummeted by 25 percent since 1979.[319] While few parents of schoolchildren work for the minimum wage, many work in industries whose wage structure is affected by the level of the minimum wage.[320] An increase in the minimum wage could well have an impact on student performance, comparable to the impact of within-school educational reforms. Other reforms to labor market institutions, such as rules making it more possible for workers to seek and obtain collective bargaining rights (as the law was intended to facilitate), would also lift the wages of low-income workers who are trying to support children.

In the 1990s, the federal government moved to offset trends toward growing income inequality, primarily by the expansion of the earned income tax credit, a subsidy to low-income working parents with children. It had an impact. In 2000, low-income single mothers earned, on average, about $8,000, but after the tax credit and other public assistance their average income nearly doubled, to about $16,000.[321] However, as discussed above, this income, at about the poverty line, is still not high enough to enable their children to have a reasonable chance to achieve, on average, at the level of middle-class children.

A commitment to attaining low unemployment would be particularly helpful to low-income families and to minorities, groups who are disproportionately hurt by recessions. The 4% rate of unemployment achieved in 2000, if it had been sustained, could have done much to increase the security of low-income families and their children.

Stable housing

Also important are reforms, not typically thought of as educational, that help lower-class families afford stable and adequate housing. Chapter 1 described high mobility rates in lower-class neighborhoods that inevitably result in lower student achievement. When children move in and out of schools, not only does their own achievement suffer but so too does the achievement of their classmates whose learning is also disrupted. There are many reasons for the high mobility of low-income families, but one of them is the lack of affordable housing in many urban areas today, a lack that is growing worse from the gentrification of urban cores and the acceleration of housing prices faster than wages and inflation. A serious commitment to narrowing the academic achievement gap should include a plan to stabilize the housing of working families with children who cannot afford adequate shelter. A national housing policy that reduced the mobility of low-income working families with children might also do more to boost test scores of their children than many commonly advocated instructional reforms.

One federal program to subsidize the rents of such families is the "Section 8" voucher program. It is under constant political attack, and is never fully funded.[322] The average cost of a Section 8 voucher is now about $6,700 per family per year.[323] The federal government spends about $14 billion annually on Section 8 vouchers and provides these subsidies to about two million families, only about one-fourth of those who are eligible.[324] If vouchers were provided to all eligible families, the cost could rise to $56 billion. If this investment were considered solely as an expenditure that contributes to an adequate education, it would be equivalent to about $1,000 on a per pupil nationwide basis.[325] Even with a commitment to undertake such spending, the money could be appropriated only very gradually, because there is presently not available sufficient housing stock to accommodate the families who need it.

An experiment to test whether housing policy could affect student achievement (as well as other outcomes) was stimulated initially by a housing desegregation suit in Chicago. A settlement required the Chicago Housing Authority to provide federal housing vouchers that would help public housing residents (mostly black) to move to rental units in desegregated neighborhoods. This "Gautreaux" program (the name is that of the plaintiff in the original lawsuit) seemed to show that families

who moved to the suburbs had better employment outcomes than comparable families who utilized their vouchers for rental units in the city. Adolescent children of the suburban movers also apparently fared better than their urban counterparts, having lower high school dropout rates and better academic achievement. Although grade point averages of suburban and city movers were nearly identical, similar grades probably represented higher achievement in the suburban than in the urban high schools, because suburban high schools had higher standardized test scores.[326]

These results whet the appetites of housing experts for a true experiment, and in 1994 Congress appropriated funds for the Department of Housing and Urban Development to implement a "Moving to Opportunity" (MTO) experiment, designed to determine whether low-income families benefit from living in communities where fewer families were poor.[327] Such experimentation is rarely possible in social science, because it necessarily requires granting a benefit widely believed to be beneficial (i.e., better housing) to some participants and not to others. It also usually requires a degree of social engineering with which policy makers justifiably feel discomfort.[328] The denial of a benefit to a control group presents the most difficult ethical problems, but these problems are mitigated if the benefit is scarce due to no fault of the experimenters, and the experimental pool from which both treatment and control groups are drawn can comprise volunteers entirely. The benefit can then be allocated in some random fashion lending itself to observation of an experiment.

These conditions were met in the MTO experiment, because in all major cities there are long waiting lists for Section 8 vouchers, and demand for private apartments whose owners are willing to participate in the program far exceed the supply.[329] So establishing a control group whose members do not receive subsidies does not withhold a benefit from those who otherwise might receive it.[330]

The MTO experiment established lists in five cities (Baltimore, Boston, Chicago, Los Angeles, and New York) of families with children who presently live in public housing or who live in subsidized privately owned low-income housing projects that are located in high-poverty neighborhoods, i.e., Census tracts whose poverty rate exceeded 40% in 1989. To get on the lists, families had to express an interest in utilizing vouchers to move to private apartments in low-poverty communities,

defined as Census tracts where poverty was less than 10%. MTO officials then randomly selected families from these waiting lists for three groups: the main treatment group that received vouchers for subsidies to rent private apartments in low-poverty communities (the families were given counseling and assistance in locating such apartments); a comparison group that received vouchers for subsidies to rent private apartments in any Census tract where they could find them without counseling and assistance; and a third group, the controls, that received no vouchers for private housing. Scholars were invited to track the experiment over a 10-year period and report on the results in each of the five cities.

Although it was generally expected that the mover families and their children would benefit, this was not certain. As noted earlier, evidence suggests that the effects on children of associating with higher-achieving peers is positive. But there is also some evidence that placing lower-class children in middle-class communities can lead these children to withdraw from academic competition due to feelings of inadequacy.[331]

At this point, the MTO evidence is mixed. One study found that younger children in mover families had higher elementary school test scores than the controls, but the outcomes for adolescents were more ambiguous. Teenagers from mover families were more likely to be disciplined in school and were more likely to drop out than those in the control group. This might not be because the behavior of the movers deteriorated; it could be because the disciplinary and academic standards in the suburban high schools were higher than the standards in the neighborhoods where the controls resided.[332] It also may be the case that by adolescence, children's behavior and achievement patterns are already well established, and that moving to a more mixed neighborhood would therefore be beneficial mainly to young children.

A recent study of adolescent outcomes from the experiment, combining data from all five sites, found that adolescent girls in mover families were less likely to drop out of high school, had better test scores and were less likely to use marijuana than girls in the control group. For adolescent boys, there were no significant educational differences between the movers and the controls, but the movers were more likely to smoke or use alcohol than the controls.[333] Further study will be necessary to understand better these surprising differences between males and females.

The MTO experiment was exceptional, because there is little interest these days in conducting more experiments of this kind. So while the results of this experiment are more encouraging than not, especially for younger children, we can still only speculate about how important such efforts might be in narrowing the achievement gap. It seems reasonable, though not certain, that if funds spent to stabilize housing were included in a broader program that facilitated the movement of low-income families to mixed neighborhoods, the achievement gap might be further narrowed as children benefited from the positive peer influences that characterize more integrated educations. Along with rental subsidies and assistance to families in finding rental units in mixed neighborhoods, such a broader program, to be effective, should also include changes in local zoning laws that now prevent low- and moderate-income rental units from being located in many middle-class neighborhoods, and better enforcement of fair housing laws that prohibit racial discrimination by realtors and landlords. These should all be considered educational, not only housing, programs.

School–community clinics

Without fully adequate health care for lower-class children and their parents, there is little hope of fully closing the achievement gap. So a high priority should be establishing health clinics associated with schools that serve disadvantaged children. Because, as Chapter 1 described, many lower-class children have health problems that impede learning, an adequate education cannot be delivered to these children unless they have adequate medical care. Because parents in poor health cannot properly nurture children, an adequate education also requires that lower-class parents get the means to achieve good health for themselves.[334] These goals require the establishment in lower-class neighborhoods of school clinics that serve children through their high school years, and their parents as well.

To narrow the achievement gap, a school-community clinic should include services that middle-class families take for granted and that ensure children can thrive in school. Clinics associated with schools in lower-class communities should include obstetric and gynecological services for pregnant and postpartum women, pediatric services for children through their high school years, physicians to serve parents of all school-age children, nurses to support these medical services, dentists and hygienists to see both parents and children semi-annually, optometrists and vision therapists to serve those who require treatment for their sight, social workers to refer families to other services, community health educators, and psychologists or therapists to assist families and children who are experiencing excessive stress and other emotional difficulties.

For elementary and secondary schools, the nation currently spends over $8,000 per pupil, on average.[335] Health clinics that provided a full array of services, associated with schools serving lower-class children, would add another $2,500 per pupil to the annual cost of education of the children in these schools.[336] Some of this money is not entirely new public spending. The costs for some of these services are eligible for Medicaid or other public reimbursement. However, because, as Chapter 1 described, some children and their parents who should get Medicaid and other public health services do not presently receive them, either because the application is cumbersome or because parents fear or do not know to apply, only guaranteed access through a school-based clinic can ensure that children will be healthy enough to learn to their full capacities.

Several small programs could be implemented relatively cheaply. For example, putting dental and vision clinics in schools serving low-income children would cost only about $400 per pupil in those schools. This is a lot less money than is often proposed for school reforms like teacher professional development or class size reduction. Schools might get a bigger test score jump, for less money, from dental and vision clinics than from more expensive instructional reforms. Designing experiments to evaluate this possibility would not be difficult.

Early childhood education

Low-income and minority children can benefit fully from good schools only if they enter these schools ready to learn. So narrowing the achievement gap requires early childhood education programs, staffed with professional teachers and nurses, and with curricula that emphasize not only literacy but appropriate social and emotional growth. As the discussion in Chapter 1 about social class differences in language development showed, gaps in vocabulary and conceptual ability develop before the age of 3.

Lower-class children's preschool and early childhood experiences should provide an intellectual environment comparable to what middle-

class children experience – rich in language, where well-educated adults are companions, instructors, and role models. Lower-class children should hear more sophisticated language, be exposed to books at an early age, and experience the excitement of stories read, told, and discussed. They should be challenged to think and talk about these stories as children of educated parents are challenged – by considering counterfactuals and relations to other experience.

To achieve in school, toddlers and preschoolers who don't gain these experiences at home will have to gain them in formal programs. These programs differ from typical daycare settings in lower-class communities where low-income children may be parked before television sets and rarely taken on interesting excursions or guided in exploratory play. Typical daycare staff for lower-class children are poorly paid, and they often have educations that are no greater than the children's parents'. Probably because of the low wages paid to child care staff, the educational background and training of caregivers for low-income children declined in the 1990s.[337]

Adequate early childhood programs also differ from Head Start, which typically does not serve children until the age of 3 or 4, too late to fully compensate for their disadvantages.[338] But there are nonetheless exemplary aspects of Head Start. Although the Bush administration is attempting to shift the balance of Head Start instruction toward more academic activities – pre-literacy activities, for example – most Head Start programs have addressed not academic skills alone but also children's health, dental, nutritional, social, and emotional needs. Head Start also includes a role for parents, and staff members are required to visit parents to instruct them in "middle-class childrearing skills."[339]

To narrow the achievement gap later on in life, lower-class toddlers probably should begin early childhood programs at six months of age, and attend for a full day. Three- and four-year-olds should attend preschool, also for a full day. Centers and preschools should operate year-round.[340]

This attendance schedule for Head Start would be costly. Early childhood experts recommend that programs for infants from six months to one year of age should place teams of two caregivers with groups of no more than eight children, or an adult-to-child ratio of 1-to-4. As toddlers mature to two years of age, early childhood standards recommend increasing this group size to 10 children, a ratio of 1-to-5.[341]

To provide an intellectual environment that is similar to one that gives middle-class children a boost, preschool teachers (for four-year-olds) should have a bachelor's degree in early childhood education. Each should be assisted by a paraprofessional, in groups of 15, resulting in an adult-child ratio of 1-to-7.5. This permits adequate supervision of group work and play, individual and group reading aloud, and less formal instruction.[342]

These recommendations are neither new nor radical. British reformers established "infant schools" for toddlers of impoverished factory workers in the 1820s, arguing, as experts do today, that costs of infant schools would be recouped in reduced costs for crime and welfare.[343] These schools, and arguments, were widely imitated in the United States before the Civil War, until American experts decided that very young children should be socialized at home, not in school.[344]

Today, most experts again recognize that such services are needed, although they rarely say so publicly, regarding the expense as politically unrealistic. One recent exception has been Susan B. Neuman, assistant secretary for elementary and secondary education during the first half of the George W. Bush administration. Dr. Neuman resigned in 2003 and subsequently denounced the No Child Left Behind law for what she called its "troubling assumption" that all children's early childhood experiences prepare them for school success.[345]

On the contrary, Dr. Neuman said, "from the beginning, the playing field is…not equal." Early childhood education should start in "the toddler years," with high professional-to-child ratios, so adults can engage in what she described as "the rich language interactions that are necessary to allow children to explain, describe, inquire, hypothesize, and analyze." It is not low expectations that cause disadvantaged children to fail, Dr. Neuman concluded. Rather, she said, "our failure has been to adequately compensate for the gap when it can best be overcome – in the earliest years."

An adequately staffed early childhood center should also have professionals who help bridge the gap between lower-class parents and schools. For parents of young preschool and primary grade children, a home-school teacher can offer parent workshops on appropriate play activities and discipline. She can visit children's homes, observe regular classrooms, and consult with regular teachers, then make parents aware of children's skill levels and help parents, to the extent they are

able, support teachers to aid instruction. Such a professional can prepare parents to meet with teachers, help them to interpret school documents (like report cards), and connect parents with others who have similar problems and concerns.

An adequate early childhood program for lower-class children would also employ visiting nurses. Home nurse visits to pregnant women and those with newborns should monitor mothers' and infants' health as well as teach health-related parenting skills that affect children's ability to learn. Nurses in an early childhood program should also conduct community education programs. Educating pregnant women and new mothers along with all young women of childbearing age about the effects on children of smoking and alcohol would be one obvious role.

Where such programs have been tried, there is good evidence of their value. In one randomized controlled experiment, nurses visited low-income unwed mothers during their pregnancies and continued these visits during the first two years of the newborns' lives. The researchers then continued to track the children through adolescence. The youngsters who, along with their mothers, received the nurse services had less adolescent crime, sexual activity, cigarette and alcohol use, and associated behavioral problems, compared to a control group that received no such services. The visiting nurses also affected the mothers' behavior: the mothers had less closely spaced subsequent unplanned pregnancies and less alcohol and drug abuse themselves. Mothers' behavioral changes of this kind are known to reduce anti-social behavior in children. In the experiment, children of mothers who were visited by nurses during pregnancy had higher I.Q. scores at ages 3 and 4, and these scores were attributable solely to nurses' success in getting mothers to reduce smoking.[346] Added positive effects flowed from other behavioral changes.

Adding the cost of such early childhood programs to regular education finances would boost average annual costs of elementary and secondary schools for lower-class children by another $2,500 per pupil.[347]

After-school programs

After-school and summer programs are also necessary contributions, organized to provide not only added opportunities for academic work but also the non-academic activities that enhance students' personal skills of the sort described in Chapter 4. When middle-class children leave

school in the afternoons, they may go to Girl or Boy Scouts, religious groups, Little League, or soccer practice, or take art, dance, or music lessons. Lower-class children are more likely to play informally or watch television.[348]

As Rafe Esquith and the designers of the KIPP model understand, structured after-school activities contribute to academic proficiency. Children with broader experiences can empathize with literary characters who share those experiences, and this enhances the incentive to read. It is also after school that privileged children are more likely to practice social responsibility in church or youth organizations and develop the organizational skills and discipline that make them more effective adults.

Every child has a somewhat different collection of skills, abilities, and interests. Children who may not excel in math may get a chance to do so in soccer, drama, or piano. Self-confidence gained may carry over to academics. It is unreasonable to think that lower-class children can achieve, on average, at middle-class levels without similar opportunities. Although some lower-class students have these opportunities at the YMCA, Boys and Girls Clubs, the Children's Aid Society, or publicly funded after-school programs, many do not.

Adolescents need such activities not only for what they provide but what they prevent. Students without supervision are at greater risk for truancy, stress, poor grades, and substance abuse. They are most likely to be perpetrators or victims of crime in the first few hours after school.[349] An adequate after-school and weekend program for lower-class children would add another $5,000 per pupil annually to the cost of these children's elementary and secondary schools.[350]

Summer programs

The first chapter reported that the achievement gap between black and white children grows the most during summer vacations from school, when middle-class children have experiences – reading books, going to camp, visiting museums, and traveling – that reinforce their school-year learning, while lower-class children fall behind. An education that hopes to narrow the achievement gap significantly, therefore, should provide comparable summer experiences – not only a summer school of extra drill in reading and math and not even a summer school only of

more advanced academic skills. Art, music, drama, dance, and physical education teachers should be more numerous in summer than in the regular year.

A summer program that truly provides lower-class children with such "middle-class" experiences would add another $2,500 to annual per-pupil costs in the schools lower-class children attend.[351]

The dangers of false expectations, and adequacy suits

All told, adding the price of health, early childhood, after-school, and summer programs, this down payment on closing the achievement gap would probably increase the annual cost of education, for children who attend schools where at least 40% of the enrolled children have low incomes, by about $12,500 per pupil, over and above the $8,000 already being spent. In total, this means about a $156 billion added annual national cost to provide these programs to low-income children.[352] Even such expenditure will not fully close the gap, but it might increase the overlap in outcomes of black and white, lower- and middle-class children.

There would be some offsetting savings. If lower-class children had adequate health care and intellectually challenging experiences in an early childhood program, their later placement in special education programs would almost certainly decline. Some fragmentary evidence of this was cited above: experiments that tested high-quality preschool programs (like the Perry experiment) showed that children in these programs were less likely to require special education when they got to regular schools. Similarly, vision therapy, adequate prenatal care, reduction in adult smoking and alcohol use, and other health interventions have also proven to reduce the placement of children in special education programs. For the last 35 years, special education has been the fastest-growing category of education spending, consuming about 40% of all new money given to schools.[353] A significant part of this growth is attributable to the learning difficulties and mental retardation of lower-class children whose disabilities result disproportionately from inadequate health care and inappropriate early childhood experiences.

Education policy makers often say that higher salaries are needed for teachers in general, and even higher salaries than these are needed to attract the most qualified teachers to take jobs in schools where children are most in need. This is certainly the case today. Teaching lower-class children who come to school not ready to learn is difficult, and even if dedicated teachers volunteer for the task, they often wear down and leave for easier assignments after a few years. But if lower-class children came to school ready to learn, in good health, and with adequate early childhood experiences, teachers would find more success and fulfillment in working with them. Less of a salary increment would be needed to attract teachers to work with such children.

Another often recommended policy is smaller class sizes in the early elementary school years, especially in schools that mostly serve children from lower-class families. These smaller class sizes have had a demonstrable effect on life-long achievement, but they are expensive. In the Tennessee experiment, for example, class sizes in kindergarten through third grade were reduced from 24 to 15, a big decrease. If this reduction were implemented for lower-class children only, average per-pupil spending for these children would go up by about $500, not including the cost of building new classrooms to house the added classes.[354] But if teachers of lower-class children had the opportunity to build on the academic and social achievements of a fully adequate early childhood program, it is likely that higher achievement could be generated without so drastic a decrease in primary grade class size.

The $156 billion in new spending, suggested here to make a significant dent in the achievement gap, is not on the political agenda, nor will it be, no matter who is elected president in November 2004. But to say that this spending is not politically realistic is not the same as to say that it is unaffordable. An average annual spending increase of $156 billion is only about two-thirds of the average annual cost of federal tax cuts enacted since 2001.[355] So if Americans truly wanted to significantly narrow the social class differences that produce an educational achievement gap, we could do so.

Many lawsuits around the country involve plaintiffs, usually representing minority children or the school districts in which they are numerous, who demand something called "adequate school funding." At this writing, the most prominent case is one in New York State where the Court of Appeals has found that the state's school financing system is unconstitutional because it does not give lower-class children the opportunity to achieve at middle-class levels. Such lawsuits, if successful, can improve education for minority and low-income youth. But advo-

cates of this litigation should take care not to raise expectations that even significantly more new dollars in schools alone will close the academic gap. In New York, the plaintiffs have proposed an added $4,000 per pupil for schools in New York City, a 24% increase in per-pupil spending. The plaintiffs say these new funds should mostly be used for smaller classes and higher teacher pay. Such new spending will certainly improve education for New York City youngsters. But advocates for the plaintiffs have gone further, and say that such an increase could close the achievement gap and enable all students to achieve at high enough levels that they qualify for admission to academic colleges.[356] This expectation is bound to be disappointed. If social class differences in readiness for learning are unaddressed, such a goal can only be met if high school graduation and college admissions standards are diluted to unrecognizability.

Funds sought in adequacy cases, while substantial, are tiny compared to what is truly needed for adequate outcomes. Schools, no matter how good, cannot carry the entire burden of narrowing our substantial social class differences.

While an additional $156 billion annually to make a significant dent in the black–white achievement gap is not politically realistic, it is important to consider it because, in the absence of such spending, talk of closing the achievement gap is unrealistic, perhaps even irresponsible.

Teacher morale

In American education today, policy makers and educators frequently invoke slogans like "no excuses," or "all students can learn to the same high standards," proclaiming what they say is their commitment to close the achievement gap between lower-class and middle-class children. Some say that these incantations are harmless, and, even if they are hyperbolic, serve the useful purpose of spurring teachers, principals, and other school officials to greater efforts to raise the achievement levels of minority and other disadvantaged students.

Such whips can serve this useful purpose. But they can also do great damage. They de-legitimize good and great teachers who dedicate themselves to raising minority student achievement in realistic increments. They drive out of the teaching profession decent teachers who feel inadequate to the task of reaching utopian goals, or who resent the cynicism of politicians and administrators who demand that such goals be attained. If this disconnect continues between what is realistically possible and the goals we establish for educators, the nation risks abandoning public education only to those willing to pander to political fashion by promising to achieve in schools what they know, in their hearts, is not possible. And in the polity, "no excuses" slogans provide ideological respectability for those wanting to hold schools accountable for inevitable failure.

Conclusion

If as a society we choose to preserve big social class differences, we must necessarily also accept substantial gaps between the achievement of lower-class and middle-class children. Closing those gaps requires not only better schools, although those are certainly needed, but also reform in the social and economic institutions that presently prepare children to learn in radically different ways. It will not be cheap.

Raising the achievement of lower-class children, and narrowing the gap in cognitive achievement and non-cognitive skills between these children and those from the middle class, are more ambitious undertakings than policy makers today acknowledge. What this book has tried to show is that eliminating the social class differences in student outcomes requires eliminating the impact of social class on children in American society. It requires abandoning the illusion that school reform alone can save us from having to make the difficult economic and political decisions that the goal of equality inevitably entails. School improvement does have an important role to play, but it cannot shoulder the entire burden, or even most of it, on its own.

Endnotes

1. Clark argued that segregation created a feeling of inferiority, and that it was difficult for the achievement of black children to overcome this stigma.

2. For discussions of the historical context of the Coleman report, see Moynihan 1968; Mosteller and Moynihan 1972; and Grant 1973.

3. Mosteller and Moynihan 1972.

4. Henceforth, for simplicity, I will say that, compared to white students who are on average at the 50th percentile, black students are on average at about the 23rd percentile.

5. To be more precise, the achievement gap will disappear if the proficiency point is either excessively simple, or excessively difficult. If you ask fourth graders to take a test with questions like the addition of 2+2, almost all from every socioeconomic group will get it right, and so there will be no test score gap. If you ask fourth graders to take a test that requires solving differential equations, almost none will do so, and there also will be no test score gap. The biggest test score gap between students from two socioeconomic groups will appear if proficiency is defined as the midpoint between the average scores of students from those groups.

6. If the average black student scores at about the 23rd percentile in a national normal distribution in which the average white student scores at the 50th percentile, about one-quarter of the black students are statistically likely to score higher than the average-scoring white student.

7. Jencks, forthcoming.

8. Gardner 1999.

9. Shonkoff and Phillips 2000.

10. Bianchi and Robinson 1997; Hoffereth and Sandberg 2001.

11. Denton and Germino-Hauskens 2000, Table 20, p. 52. Of children whose mothers have at least a bachelor's degree, 59% are read to daily. Of children whose mothers have no more than a high school diploma or equivalent, 39% are read to daily. Of children whose mothers have less than a high school diploma, 36% are read to daily. Of white children, 49% are read to daily. Of black children, 35% are read to daily.

Of children whose mothers have at least a bachelor's degree, 93% are read to at least three times a week. Of children whose mothers have no more than a high school diploma or equivalent, 75% are read to at least three times a week. Of children whose mothers have less than a high school diploma, 63% are read to at least three times a week. Of white children, 86% are read to at least three times a week. Of black children, 68% are read to at least three times a week.

12. Denton and Germino-Hauskens 2000, Table 19, p. 51. Of children whose mothers have at least a bachelor's degree, 71% have more than 50 books in their homes; of

children whose mothers have only a high school diploma, 37% have this many books; of children whose mothers did not graduate from high school, only 14% have this many.

13. Rathburn and West 2003, Table 4.

14. Torney-Purta et al. 2001, p. 65.

15. Other countries do not track their achievement gaps with as much precision as we do in the United States. In some countries, there is resistance to collecting data by income or ethnicity because of a feeling that this somehow legitimizes a non-assimilationist ideology (Rothstein 2000a). For descriptions of gaps in other nations, see Begag 1990; Castles et al. 1984; Garner 2004; Neuman and Peer 2002; OFSTED 1999; Ogbu 1992b; and Sciolino 2004. For a discussion of poor educational attainment of low-income children of all ethnicities in Great Britain, see Ermisch 2001.

16. OECD 2001.

17. Lemke 2002, p. 37; Figure 17, p. 44.

18. Snow and Tabors 1996.

19. Lareau 1989.

20. Mikulecky 1996.

21. See also Britto and Brooks-Gunn 2001, who report on a survey that included only poorly educated single African American mothers. Within this group, more expressive language use during book reading predicted children's achievement, but the survey does not lead to any reliable conclusions regarding whether the use of expressive language is related to social class.

22. Mikulecky 1996.

23. Mikulecky 1996

24. Snow and Tabors 1996.

25. See Lareau 2003 for a general discussion of these childrearing pattern differences.

26. Tourangeau et al. 2002, Section 7.4.2, pp. 7-18.

27. Portas 2004. Additional data analysis provided to the author by Carole A. Portas. In the lowest 20% of families by socioeconomic status, 79% of parents believed that their children should know the alphabet letters when they entered kindergarten. But only 55% of families from the highest 20% of families by socioeconomic status shared this belief. For believing that children should know how to count at kindergarten entry, the shares were 71% and 50%, respectively.

28. Lareau 2002, 2003.

29. Heath 1983.

30. Heath 1983.

31. Heath 1983.

32. The childrearing practices of upper-middle-class parents have come under severe criticism by developmental psychologists for placing too much decision-making responsibility on children and robbing them of their childhood innocence. However valid these criticisms may be, they do not negate the congruence of such childrearing practices with the skills required for high academic achievement.

33. Kohn 1969.

34. Comer 1988; Heath 1983; Lareau 2003.

35. Hofferth and Sandberg 2001; Lareau 2003.

36. Heath 1983.

37. Brooks 1916.

38. Gill and Schlossman 2000.

39. Lareau 2003.

40. Hart and Risley 1995; Hart and Risley 2003. The Hart-Risley findings have sometimes been mis-reported as meaning that children of professionals had larger vocabularies than the vocabularies of adults on welfare (not than the much smaller vocabularies that adults on welfare use when speaking to children). See Nunberg 2002; Bracey 2003.

41. Wilson 2002. Some historians disagree with this interpretation, but Wilson's summary of the controversy is persuasive.

42. Kalil, Pattillo, and Payne 2001; however, Geronimus 1997 argues that children born to poor black teenagers may have better outcomes than children born to poor black young adults, because health for the very poor deteriorates very early and so black teen mothers may be in better health than black young adult mothers.

43. Lareau 2002.

44. Sanderson 1996, Table 1, p. 4.

45. Hudson 2003, Figure 1; 72% vs. 82% figure from Kaufman and Naomi 2000, Table 4, p. 18.

46. Calculated from Hudson 2003.

47. NCES 2003a, Table 22-1.

48. Ogbu 2003.

49. Kahl 1953.

50. Horvat, Weininger, and Lareau 2003.

51. Horvat, Weininger, and Lareau 2003.

52. Rothstein, Carnoy, and Benveniste 1999.

53. See, for example, Bankston and Zhou 1995; Zhou and Bankston 1998.

54. Hofferth and Sandberg 2001.

55. Kao, Tienda, and Schneider 1996.

56. Covello 1936; Olneck and Lazerson 1974; Sowell 1994. This history is summarized in Rothstein 1998. Thernstrom and Thernstrom 2003 also review these differences.

57. Ogbu 2003.

58. See, for example, Thernstrom and Thernstrom 1997. The most prominent scholarly advocate of the claim that discrimination no longer plays a role is James J. Heckman who claims (1998) that "[a] careful reading of the entire body of available evidence confirms that most of the disparity in earnings between blacks and whites in the labor market of the 1990s is due to the differences in skills they bring to the market, and not to discrimination within the labor market."

59. Black–white wage differences seem to be small for workers of similar cognitive skills when those skills are measured by the Armed Forces Qualifying Test, but not by other tests. And even on this test, when results are controlled for years of education, a black–white wage difference re-emerges for workers who have similar achievement and attainment. (White workers have more education, on average, than black workers of similar ages.) See Darity and Mason 1998.

60. Race, not test scores, plays a bigger role in explaining differences between black and white earnings than between black and white hourly wages, because black workers, once hired, are likely to earn close to (but still less than) what white workers with similar test scores earn. But because black workers are unemployed for longer periods than white workers with similar test scores, and because, if employed, they work fewer hours, the annual earnings of black workers are lower. The more frequent unemployment and fewer hours of employment of black men than of white men with similar skills is probably the result of continued discrimination. See Johnson and Neal 1998.

61. Darity and Mason 1998.

62. Pager 2003. Thernstrom and Thernstrom 1997 acknowledge that in a highly credible audit study in Washington, D.C., white applicants were more successful than black applicants whose qualifications were similar. But the Thernstroms dismiss the significance of this study because it tested only private sector openings, whereas many job vacancies in Washington, D.C. are governmental, and in federal jobs black applicants might even have an advantage. This may be the case, but private sector employment in Washington, D.C. is more representative than government employment of all employment nationwide. If employment discrimination persists for black applicants in the private sector in Washington, D.C., it probably persists nationwide, in employment overall.

63. Darity and Mason 1998.

64. Darity and Mason 1998.

65. Kluegel and Bobo 2001.

66. Noguera 2001; also, Mickelson 1990; Ogbu 2003.

67. Kao, Tienda, and Schneider 1996. Ogbu 1990 cites the relative success of black Caribbean immigrants to argue that the relative lack of success of native-born blacks stems from an experience of oppression, not biology. This may be true, although it is difficult to know how much the superior performance of immigrants is attributable to the fact that the most highly motivated Caribbean blacks are those who choose to immigrate.

68. Ogbu 2003.

69. It has often been reported that black students accuse their more academically talented peers of "acting white" in order to pressure these better students to conform by reducing their achievement. Critics of this explanation have noted that a culture of underachievement is not the exclusive preserve of black students; white youths, too, who are good students are sometimes ridiculed by their peers for being "nerds" or "geeks." My discussion adopts the conclusion of Ronald F. Ferguson (Cook and Ludwig 1998) that black students come under more such pressure than white students whose social characteristics are similar, but Ferguson acknowledges that there are insufficient data to fully resolve this issue. The problem of anti-intellectual pressure felt by students of both races has been discussed and debated not only by John Ogbu 2003 (and see also Fordham and Ogbu 1986) but by Steinberg 1996, Bishop et al. 2003, and Cook and Ludwig 1998 (including the comment by Ronald F. Ferguson).

70. Egbuonu and Starfield 1982; Starfield 1982.

71. Orfield, Basa, and Yun 2001.

72. Festinger and Duckman 2000.

73. The normal incidence of vision problems in children is about 25%. Clinicians and researchers have found incidences of more than 50% in some communities, although there has been no systematic nationwide survey of vision problems by race or social class. See Gould and Gould 2003; Orfield 2003; Orfield, Basa, and Yun 2001; Duckman 2003; P. Harris 2003; Harris 2002.

74. Harris 2002.

75. There is surprisingly no experimental evidence on the relationship between prenatal care and vision, and little good research evidence generally on the relationship between socioeconomic conditions and children's vision. In the following discussions, I have been guided by personal correspondence and conversations with academic and clinical optometrists, including Professor Robert Duckman (State University of New York), Dr. Paul Harris, Dr. Antonia Orfield, and Professor Harold Solan (State University of New York). I also relied on the advice here of Dr. Barbara Starfield at Johns Hopkins University. Sara Mosle, a former teacher in a low-income school (and now a journalist and historian) stimulated this line of inquiry for me when she showed me her unpublished article, "They Can't Read Because They Can't See." See also Festinger and Duckman 2000; Harris 2002; Orfield, Basa, and Yun 2001; Solan et al. 2003.

76. NCES 2003b, Table 117.

77. Orfield 2003.

78. Gould and Gould 2003.

79. Orfield et al.2001; Orfield 2003.

80. Egbuonu and Starfield 1982.

81. Some medical authorities state that antibiotics have been overprescribed for young children's ear infections and that painkillers alone would sometimes suffice. However, without good access to personal pediatricians who know a child's history, parents cannot themselves determine whether antibiotics or painkillers are the proper treatment in any particular case. See Altman 2004.

82. GAO 2000, Figure 1, p. 8.

83. Egbuono and Starfield 1982; GAO 1999; Neisser, et al. 1996; Neisser 1997. There is scientific controversy regarding how much lead exposure is harmful to children.

84. Brookes-Gunn and Duncan 1997.

85. GAO 1999.

86. Barton 2003; Blum 2004.

87. Johnson 2003.

88. Frieden 2003.

89. Associated Press 2003b.

90. Forrest et al. 1997; Halfon and Newacheck 1993.

91. Associated Press 2003a. Vaughan 2003.

92. Whitman, Williams, and Shah 2004; Ritter 2004.

93. Halfon and Newacheck 1993.

94. Whitman, Williams, and Shah 2004.

95. Hilts 2000.

96. Halfon and Newacheck 1993.

97. Forrest et al. 1997.

98. *Morbidity and Mortality Weekly Report* 2002, Table 2.

99. The accuracy of these rates may be questioned because they are self-reported (by parents) and because there may now be more awareness of asthma, leading parents to categorize respiratory problems as asthmatic that they might not have categorized in this way in 1980. However, there seems to be a consensus among public health professionals that asthma has increased, even if the specific rate of increase reported here is open to question. Noguera 2003 found a chronic respiratory disease rate of 40% in an Oakland, Calif. school.

100. Welfare Law Center 2000; Dubay, Haley, and Kenney 2000.

101. Mills and Bhandari 2003, Figure 4. Note that the figures presented here are for "black alone or in combination," vs. "white alone, not Hispanic."

102. Komaromy et al. 1996. From the 1990 Census, a neighborhood with high concentration of black and Hispanic residents was defined as one with more black and Hispanic residents than 85% of all neighborhoods. A high poverty neighborhood was defined as one where more than 25% of the residents had household incomes of less than $15,000.

103. Brown et al. 2003.

104. Hoffman et al. 2003, p. 17. Of white children between the ages of 19 and 35 months, 21% lack standard immunizations. Of black children this age, 28% lack them.

105. Starfield 1997.

106. Astley 2003; Simmons et al. 2002.

107. Richardson et al. 2002; Streissguth et al.1994.

108. Abel 1995.

109. CDC 2002b.

110. Abel and Hannigan 1995.

111. Astley 2003.

112. CDC 2001a.

113. CDC 2001b, Table 2.15.

114. Hack, Klein, and Taylor 1995.

115. Hoffman, Llagas, and Snyder 2003, p. 15.

116. Whyatt et al. 2004; Berkowitz et al. 2004; Whyatt et al. 2002. The researchers plan to follow the children born as the pesticide ban was being enforced, to determine whether those born to mothers with less exposure in fact have better academic performance and behavior.

117. Rich-Edwards et al. 2001; Wadhwa et al. 2001; Halfon 2002; Lu 2002; Lu and Halfon 2003.

118. Abel and Hannigan 1995.

119. Egbuonu and Starfield 1982.

120. Brown and Sherman 1995; Murphy et al. 1998b.

121. Karp et al. 1992.

122. CDC 2002c.

123. Brown and Sherman 1995.

124. America's Second Harvest 2003; Koch 2002.

125. Neisser et al. 1996.

126. Figlio and Winicki 2002. Whitney Allgood (personal correspondence) reports that the principal of her child's school this year assigned parents to deliver healthy breakfast foods for classes taking standardized tests, for each day of testing. At this school, most children are middle class, and the breakfasts were not served to alleviate real hunger but only to ensure that children were well-nourished on testing days, a condition that is less likely for low-income children.

127. That some lower-class children go hungry or are poorly nourished, and many fewer middle-class children have these characteristics, is not inconsistent with higher

rates of obesity for low-income children, attributable to poor dietary habits (CDC 2002a). Having excessive caloric intake does not boost children's academic achievement, but if some lower-class children have inadequate nutrition, the average achievement of lower-class children will be lower.

128. Nord, Andrews, and Carlson 2003, Table 6. "Low-income" here refers to children living in families whose income was below 130% of the poverty line. Table 4 shows that 11% of low-income children lived in households where someone was hungry. Parents report that, when there is insufficient food, adults go hungry before children do.

129. U.S. Conference of Mayors - Sodexho 2003; Zeller 2004.

130. Rosso and Fowler 2000, Table III.2

131. Kaufman 2003. New York City was found in violation of federal regulations for not ensuring that families were made aware of their eligibility.

132. Brown 2003.

133. O'Donnell 2001.

134. Meyers et al. 1989; Murphy et al. 1998a.

135. Kerbow 1996; Bruno and Isken 1996.

136. GAO 1994.

137. Bruno and Isken 1996.

138. For the effects of high mobility on non-mobile students and teacher practices, see Kerbow 1996; Wang, Haertel, and Walberg 1994. For the effects of mobility on the test score gap, see Hanushek, Kain, and Rivkin 2004a.

139. In one national database that tracked children for six years, of white children who were from families that were poor at some time during the period, only 22% were poor for at least five of the six years. For blacks, however, of those who were from families that were poor at some time during the period, 55% were poor for at least five of the years. See Brooks-Gunn et al. 2003.

140. Geronimus 2000. Causation can work both ways, for adults. Adults who are in poor health are able to earn less and are therefore more likely to be poor for extended periods. However, this would not explain why children would have more extended periods of living in families in poverty if their health was poor.

141. Duncan and Brooks-Gunn 1997.

142. Brooks-Gunn and Duncan 1997.

143. McLoyd 1990; McLoyd et al. 1994; Flanagan and Eccles 1994.

144. McKinnon and Humes 2000; U.S. Census Bureau 2002a. In 2002, black families of all ages included an average of 1.27 children; white families of all ages included an average of 0.91 children.

145. Zajonc 1976; Zajonc 1983.

146. Grissmer et al. 1994.

147. Grissmer 1999.

148. The data on income are from 1979 to 2000; see Mishel, Bernstein, and Boushey 2003, Table 1.4. The data on wealth are from 1983 to 1998; Mishel, Bernstein, and Boushey 2003, Table 4.6. These are the most recent comparable data.

149. Keister, forthcoming.

150. Brown et al. 2003.

151. Phillips et al. 1998.

152. Cameron and Heckman 2001; Fryer and Levitt 2002; Phillips et al. 1998.

153. Herrnstein and Murray 1994. Phillips et al. (1998, p. 138) conclude that "[e]ven though traditional measures of socioeconomic status account for no more than a third of the [black–white] test score gap, our results show that a broader index of family environment may explain up to two-thirds of it." There are other differences, for example health and housing, not considered by Phillips et al. that might explain even more of the gap.

154. Lee and Burkam 2002, Figure 1.2. Lee and Burkam express these data in standard deviation units, -0.62 for math, -0.4 for literacy. This figure compares blacks to whites, and assumes that whites have an average ranking on these tests at the 50th percentile. The figure converts Lee and Burkam's data from standard deviation units to percentile ranks. This requires an assumption that test scores are normally distributed.

155. Lee and Burkam Figure 1.5 illustrates a few race vs. SES differences. Other data cited here and in subsequent paragraphs were provided to the author by Lee and Burkam. In all cases, Lee and Burkam present their results in effect sizes, or standard deviation units. The percentile ranks used here were estimated assuming normal distributions.

156. The greater gap in math than in reading is unexpected, because most analysts would expect home influences to play a bigger role in reading than in math, but perhaps this is not the case, especially in early childhood. The difference in the math and reading gaps in this early childhood survey warrants further examination, and should be confirmed by other studies before being taken too seriously. Although it is hard to imagine how the absolute difficulty of a math and reading test could be compared, the difference in the math vs. reading gap could have something to do with the relative difficulty of the tests given to the entering kindergartners in the Early Childhood Longitudinal Study sample.

157. It is hard to be certain about how much of the gap is attributable to what schools do, and how much is attributable to home influences, partly because there is no single good way to measure the achievement gap. Here are some "back-of-the-envelope" calculations to illustrate the conceptual difficulty of measuring the achievement gap.

The most common way to measure it is in percentile ranks. On tests of math and reading, it seems that lower-class four-year-olds, on average, achieve at about the same level as middle-class four-year-olds who are at about the 34th percentile in a distribution of all middle-class four-year-olds' achievement. More precisely, average low-SES four-year-olds' achievement is 0.55 of a standard deviation below average middle-class four-year-old achievement in math, and 0.47 of a standard deviation below average middle-class four-year-old achievement in literacy skills. This social class gap is

similar to the black–white skill gap at age 4. See Figures 2A, 2B, 3A, and 3B and Lee and Burkam, Figure 1.3.

At 9 years of age, the black–white achievement gap is a full standard deviation in reading and almost as great in math. (The average reading scale score for nine-year-olds on the National Assessment of Educational Progress in 1999 was 186 for black students and 221 for white students; the average math scale score for blacks was 211 and for whites it was 239; NCES 2003b, Tables 111 and 123). In percentile terms, this means that average black nine-year-olds had reading and math proficiency that was about 30 percentile points below average white proficiency.

So, measured by changes in percentile ranks, we would say that the black–white gap grew by about 14 percentile points from 4 to 9 years of age. Or we could say that the gap nearly doubled (an initial gap of 16 percentile points increased by an additional 14 percentile points).

But this gap would look different and have different rates of change if we measured it in "real" terms. For example, Hart and Risley 1995, Table 5 (p. 176) report that, at age 3, children of parents who are professionals have a vocabulary of about 1,100 words, children of working-class parents have a vocabulary of about 750 words, and children of parents receiving welfare have vocabularies of about 525 words. If we assume that an average of what Hart and Risley called "professional" and "working class" children are comparable to what Lee and Burkam describe as middle SES, and if we assume that an average of Hart and Risley's "working class" and "welfare" children are comparable to what Lee and Burkam describe as low SES, then the Hart and Risley finding can be interpreted as that middle SES children's vocabularies are 45% higher (925 words vs. 638 words) than low SES children's vocabularies at age 3.

Moats 2001 reports that at first grade, the difference between the vocabularies of "linguistically rich" and "linguistically poor" children is 20,000 vs. 5,000 words. If we assume that these categories are comparable to the professional and welfare categories used by Hart and Risley, and do a similar interpolation, we can interpret Moats' claim as one finding that middle SES children in first grade have vocabularies (roughly 16,000 words) that are nearly 80% higher than those of low SES children (roughly 9,000 words).

Thus, in percentile (or standard deviation) terms, the gap grew by nearly 100% from early childhood to the primary school years (comparing Lee-Burkam findings to NAEP nine-year-olds' scores). But from early childhood to primary school, the average middle-class student has learned 19,000 new words while the average low-income student has learned only 9,000 new words (comparing the Hart-Risley and Moat reports). Does this mean that the gap has more than doubled? Or, if there was a 45% gap in vocabulary words in early childhood and an 80% gap in primary school, does this mean that the gap didn't quite double?

In sum, in average percentile ranking, the achievement gap nearly doubled from early childhood to elementary school, or it grew by 14 percentile points. In absolute number of vocabulary words, the gap more than doubled. The gap in vocabulary words grew in percentage terms, but at a slightly slower rate – by about 75% (from a gap of 45% to a gap of 80%).

The numbers used here should not be taken seriously for any purpose except this illustration. Actually equating results from ECLS, NAEP, Hart and Risley, and Moats is not statistically possible. These are only "back-of-the-envelope" reflections for the sole purpose of illustrating that reports of the gap are a function of how the underlying data are measured and defined.

It becomes even harder (probably impossible) to measure the gap in real terms when describing subject matter that is not as easily quantifiable as "numbers of vocabulary words." There is no way to measure, in real terms, the gap between mean achievement in arithmetic and achievement that is half a standard deviation below the mean. Percentile ranks (or standard deviation units) are the only way such a gap can be measured.

158. Phillips 2000, Table 2 and p. 104. The Phillips data compare achievement in the 12th grade with achievement in the first grade, so they do not precisely explain changes in the gap since kindergarten.

159. Phillips 2000, pp. 108-109.

160. Phillips 2000; Allington and McGill-Franzen 2003; Entwisle and Alexander 1992. One recent study (Fryer and Levitt 2002) finds no growth of the achievement gap during the summer, but this claim is at odds with most of the research literature.

161. Hayes and Grether 1983.

162. Mikulecky 1996.

163. Neuman and Celano 2001, Tables 1, 3, 8.

164. Entwisle, Alexander, and Olson 2000.

165. Hauser 2000.

166. Gitomer 2003.

167. Sanders et al. 1997. For purposes of this discussion, I assume that value-added analysis does in fact have the capacity to separate students' personal and socioeconomic characteristics from teacher effects. However, the technique relies on an assumption that these characteristics are stable for students throughout their school careers, and so any deviation from a child's pattern of performance can be attributed to teaching. For individual children, this assumption is certainly invalid. Just as the quality of a child's teacher changes from year to year, so too do a child's background characteristics change over time. Parents' unemployment, divorce or remarriage, changing health conditions, or other personal or family economic crises can surely affect the underlying pattern of a child's performance, and so deviations from a previous or subsequent pattern may not reflect the influence of teachers alone. It is untested whether, aggregated to the level of all children of a given teacher, such changes in student background characteristics occur with enough magnitude and frequency to make the value-added assumption invalid.

168. Sanders and Rivers 1996, Figure 1. This 25-percentile-point gain is an average of a 16 percentile gain in Sanders' and Rivers' School System A and a 33 percentile gain in their School System B.

169. Sanders and Rivers 1996. See, for example, Fallon 2003. Although Dr. Sanders claims that he has identified teacher value-added, and many policy makers repeat this claim, actually he has identified the value-added of being in a particular classroom. Certainly, the effectiveness of a teacher is a very important ingredient of classroom effectiveness, but it is not the only one. For example, equally effective teachers may have different value-added because they teach classes of different sizes, have aides of different effectiveness, have textbook sets of different quality, are given different de-

275. OTA 1990.

276. Ones, Viswesvaran, and Schmidt 1993.

277. Levin and Kelley 1994; Rotter 1966.

278. "Many integrity test publishers have conducted adverse impact research. Their studies report a variety of findings: in some cases, no statistically significant differences between groups' average test scores are found, in other cases there appears to be a favorable bias toward protected groups (minorities, women, and the elderly), and in other cases minority groups (i.e., Blacks and Hispanics) appear to do less well than whites. Based on the studies supplied by the authors and publishers of honesty tests, their instruments appear to be free of adverse impact" (OTA 1990, p. 68).

279. Sizer 1984, 1992.

280. Rothstein 2001.

281. Rushowy 2004.

282. Conference Board of Canada 2000.

283. U.S. Census Bureau 2002b. In 2000 37.2% of white (non-Hispanic) young adults voted compared with 33.9% of black young adults; 51.7% of eligible white (non-Hispanic) young adults were registered compared with 48.0% of eligible black young adults.

284. Voting participation gaps and test score gaps are not directly comparable, but while the black–white voting participation gap seems small, the history test score gap seems large. On the National Assessment of Educational Progress, 49% of white 12th graders scored above the "basic" level, while only 20% of black 12th graders were above "basic." There are similar gaps for eighth and fourth graders. See Lapp, Grigg and Tay-Lim 2002.

285. Frazer 2000; Langton and Jennings 1968; Torney-Purta et al. 2001; Niemi and Junn 1998; Greene 2000.

286. Lutkus et al. 1999, Table 5.8; Galston 2001; CHR 1999.

287. Torney-Purta et al. 2001.

288. Niemi and Chapman 1999; Youniss, McLellan, and Yates 1997; Hanks and Eckland 1998.

289. Lapp, Grigg, and Tay-Lim 2002, Figure 3.4; Hoffman, Llagas, and Snyder 2003, supplemental table 6.1.

290. Planty and Regnier 2003, Table 2. "High income" refers to families from the top quartile of the income distribution; "middle income" refers to families from the second and third quartiles of the income distribution; "low income" refers to families from the bottom quartile of the income distribution.

291. Planty and Regnier 2003, Table 2.

292. Planty and Regnier 2003, Table 1.

293. Planty and Regnier 2003, Table 4.

294. Planty and Regnier 2003, Table 1.

295. Test score advantages for white children in Head Start persist longer. See Currie and Thomas 1995; Garces, Thomas, and Currie 2000.

296. Schweinhart, Barnes, and Weikart 1993, Table 3.

297. Schweinhart, Barnes, and Weikart 1993.

298. Schweinhart, Barnes, and Weikart 1993, Tables 13 and 14.

299. Schweinhart, Barnes, and Weikart 1993; Barnett 1995.

300. Schweinhart, Barnes, and Weikart 1993, Table 9.

301. Schweinhart, Barne,s and Weikart 1993, Tables 22, 18, 24.

302. For a popularized discussion of learning theory, and how non-cognitive and cognitive development reinforce one another, see Stipek and Seal 2001.

303. Hacsi 2002.

304. Garces, Thomas, and Currie 2000; Currie and Thomas 1995.

305. Barnett 1995; Yoshikawa 1995.

306. Nye, Hedges, and Konstantopoulos 2002; Finn 1998; Finn and Achilles 1999; Krueger and Whitmore 1999; Krueger and Whitmore 2001.

307. Grissmer 1999.

308. It is beyond the scope of this book to engage the debate about whether colleges of education and teachers trained in them give either too much or too little emphasis to the development of children's motivation to learn, or to the different ways in which children may approach academic learning. Attacks on "progressive" pedagogy and demands that teachers focus more on developing children's basic academic skills have fueled contemporary policy's emphasis on tests of basic skills as the sole measure of learning. The concern of this chapter, however, has been not so much how non-cognitive characteristics do or do not contribute to cognitive development but rather about how the non-cognitive skills develop that we value in and of themselves – productivity, employability, good citizenship, socially responsible behavior, etc. – and what the role of schools might be in enhancing these skills.

309. For example, Crane 1991. Hanushek, Kain, and Rivkin 2004b find that, in Texas, if all schools were equally integrated (with similar proportions of black and white students), the black-white test score gap in mathematics in grades 5-7 would be reduced by 25%. For a review of claims about the importance of peer influences, see Kahlenberg 2001. There is a contrary view, however. See Jencks and Mayer 1990.

310. There is no clearly defined "tipping point" where student achievement plummets once a school's poverty concentration passes that point. A school's average student achievement appears to decline almost linearly as the school's percentage of children receiving subsidized lunches increases. But around the point where subsidized lunch eligibility exceeds 40%, the decline in average student achievement becomes slightly more precipitous. See Lippman, Burns, and McArthur 1996. Kahlenberg 2001 (see especially pp. 39-40 and 110-114) concludes, based on a careful review of "tipping point" literature, that preventing a precipitous decline in achievement requires that a school be "over 50%" white or middle class.

311. Smith 2003. In today's dollars, Mr. Moynihan was asking whether, to raise student achievement, Mr. Smith would rather spend nearly $5,000 in schools or in family income support.

312. Mosteller and Moynihan 1972.

313. In the wake of positive results from the Tennessee class size experiment, California adopted a statewide class size reduction program for the primary grades. There was already a teacher shortage in California, and the sudden implementation of the class size reduction program exacerbated that shortage. What was worse, it seems that some of the most experienced and qualified teachers who had been working in low-achieving schools took newly created jobs in suburban middle-class schools. With all schools competing for a small number of new teachers to staff the added primary school classrooms, schools in middle-class communities where working conditions were better had an edge in recruiting teachers during the implementation of the class size reduction program. The program may still have done some good for lower-class children, but not nearly as much as it might have done were it implemented only for schools serving such students. See Ross 1999; Jepsen and Rivkin 2002; Hacsi 2002; Bohrnstedt and Stecher 2002.

314. CBO 2003. Data from 2003 are not yet available.

315. CBO 2003. The most spectacular contrast, of course, is with the highest 1% of families, who had income growth exceeding 230% over the 1979-2002 period. However, the focus here is on the contrast between low- and middle-income families, because this is the relevant comparison for the educational achievement gap between lower- and middle-class children.

316. Mishel, Bernstein, and Boushey 2003, Table 5.2.

317. Mishel, Bernstein, and Boushey 2003, Table5.3.

318. Bernstein, Brocht, and Spade-Aguilar. 2000; Boushey et al. 2001, Table 3.

319. Mishel, Bernstein, and Boushey, Table 2.41.

320. Bernstein and Chapman 2002.

321. "Low income single mothers" are defined here as those whose earnings were below the median for all single mothers. Mishel, Bernstein, and Boushey 2003, Figure 5M.

322. A widely promoted reform, claimed to raise the achievement of lower-class children, is the provision of vouchers to pay the private school tuition for such children. However, such vouchers are usually designed only to enable these children to attend private schools that are similar in social class composition to the public schools that voucher recipients would leave. The result is that such voucher programs have no meaningful effect on lower-class children's achievement. See Krueger and Zhu 2003. Enthusiasts for school vouchers, however, do not similarly advocate housing vouchers that would permit lower-class children to attend middle-class schools where their achievement could rise. See Rothstein 2000b.

323. Sard and Fisher 2003.

324. Center on Budget and Policy Priorities 2003.

325. There are presently about 50 million children enrolled in public elementary and secondary schools.

326. Rosenbaum 1991; Kaufman and Rosenbaum 1992.

327. MTO differs from Gautreaux in that MTO tests the effect of moving out of predominantly low-income communities, whereas analyses of Gautreaux test the effect of moving out of predominantly minority communities. In practice, there is considerable overlap.

328. Jencks and Mayer 1990 observe: "From a scientific viewpoint, the best way to estimate neighborhood effects would be to conduct controlled experiments in which we assigned families randomly to different neighborhoods, persuaded each family to remain in its assigned neighborhood for a protracted period, and then measured each neighborhood's effects on the children involved. Fortunately, social scientists cannot conduct experiments of this kind."

329. Janofsky 1999.

330. In other respects, however, the program has still been controversial. Particularly in Baltimore, groups claiming to represent suburban residents complained that moving poor families into the suburbs would raise crime rates and reduce property values in these suburbs. As a result of these complaints, the federal government delayed commencement of the experiment, and then scaled it back (Dreier and Moberg 1995; Gordon 1997). Some conservative social critics attacked the program, claiming that recipients of vouchers who move to the suburbs will include not only the victims of inner-city social disorganization, "but the perpetrators as well, who may then spread social problems to marginal but stable working-class neighborhoods" (MacDonald 1997).

331. Jencks and Mayer 1990.

332. Ludwig et al. 2001.

333. Kling and Liebman 2004

334. Brooks-Gunn and Duncan 1997 cite evidence that low-income parents have worse physical and mental health than middle-class parents, and that parental mental health has an adverse effect on child outcomes.

335. NCES 2003b, Table 167. The average per pupil amount for 1999-2000, the most recent year reported, was $8,032.

336. This is based on a cost estimate of $2,600 per pupil in schools that had such clinics. The bases for this and subsequent estimates in this chapter, with program models and descriptions of service assumptions, will be published in a forthcoming working paper by Allgood and Rothstein. (The paper will be posted at www.epinet.org, the website of the Economic Policy Institute, by the end of 2004.) The numbers are still subject to revision. If we assume that these clinics should be placed in schools where at least 40% of the enrolled students were eligible for free and reduced lunch, clinics should be placed in schools serving 26% of all students; see Lippman et al. 1996, Table 1.7, p. A-9. This would increase the per-pupil spending, averaged for all children, rich and poor, by about $700.

337. Vandell and Wolfe 2000.

338. Lee, Brooks-Gunn, and Schnur 1988; Currie and Thomas 1995.

339. Garces, Thomas, and Currie 2000; Currie and Thomas 1995.

340. Barnett 1995.

341. NAEYC 1998.

342. NAEYC 1998. It is possible that advocacy groups wanting to enhance the importance of early childhood education might recommend higher qualifications for preschool teachers, and higher adult-child ratios than might be necessary to raise outcomes to desired levels. However, there is no experimental research that compares the outcomes generated by preschool teachers with different levels of educational attainment. And it seems reasonable that, if we require professionals to staff teaching positions for kindergartners and first-graders, similar qualifications might be required for preschool teachers as well. The recommendation for professional qualifications for preschool teachers was recently reinforced by Barnett et al. 2004.

343. See, for example, Donahue and Siegelman 1998.

344. Hacsi 2002; Vinovskis 1995.

345. Neuman 2003.

346. Olds et al. 1997; Olds et al. 1999.

347. It would increase average per-pupil costs nationwide by another $700 per pupil. See note 336.

348. Lareau 2002.

349. NIOOST 2000.

350. It would increase average per-pupil costs nationwide by another $1,400 per pupil. See note 336.

351. It would increase average per-pupil costs nationwide by another $700 per pupil. See note 336.

352. Enrollment in public elementary and secondary schools in 2001 was about 48 million (NCES 2003b, Table 37). Spending an additional $12,500 on 26% of these children would cost about $156 billion a year.

353. Rothstein 1997; Rothstein and Miles 1995.

354. This rough estimate assumes that average per-pupil spending is currently about $8,000 per pupil, that teacher salary and compensation represents 56% of that amount (NCES 2003b, Table 164), and that a class size reduction of 37% (from 24 to 15) would be applied to the first four of the 13 grades of elementary and secondary education. This calculation does not adjust for the fact that not all students finish high school, and it does not take account of the fact that costs are not identical at each grade level (i.e., it assumes that grades K-3 represent 4/13 of total costs).

355. Citizens for Tax Justice 2003. The total 10-year cost (to 2010) of federal tax cuts enacted from 2001 to 2003 is about $2.3 trillion, or an average of about $229 billion annually.

356. Winter 2004. The plaintiffs have proposed funding that, they claim, would enable all students to pass New York State's "Regents" exams, which signify the satisfactory completion of a college preparatory academic curriculum.

357. This appendix relies heavily upon reviews by Handel (forthcoming), Capelli 1995, and Barton 1990.

358. NACE 2004.

359. NAM 2001.

360. Teixeira 1998.

361. National Center on the Educational Quality of the Workforce 1995.

362. NCEE 1990. See also Marshall and Tucker 1992. The former labor secretaries thought that more employers should have been dissatisfied with high school mathematical and literacy levels, and that the employers were content with these levels only because they had failed to organize workplaces in the most productive ways to take advantage of higher cognitive skills. So the survey did not suggest that schools were doing an adequate job with academics.

363. Barton 1990.

364. CED 1985.

365. Barton 1990.

366. Barton 1990.

367. Levin, Rumberger, and Finnan 1990.