

# **Rising Inequality in Family Incomes and Children's Educational Outcomes** <sup>1</sup>

**Greg J. Duncan and Richard J. Murnane**

America has always taken pride in being the land of opportunity, a country in which hard work and sacrifice result in a better life for one's children. In the quarter century following World War II, the pride was justified, as the benefits of substantial economic growth were shared by both high- and low-income families (Duncan and Murnane 2011). But beginning in the 1970s, economic changes favoring highly educated workers, plus demographic shifts such as the rise of single-parent families, produced sharply growing income gaps between high- and low-income families.

Figure 1 shows the average annual cash income in a particular year (in 2012 dollars) for children at the 20<sup>th</sup>, 80<sup>th</sup> and 95<sup>th</sup> percentiles of the nation's family income distribution.<sup>2</sup> Compared with 1970, the 2010 cash family income at the twentieth percentile has fallen by more than 25 percent. In contrast, the incomes of families at the eightieth percentile grew by 23 percent, to \$125,000, while the incomes of the richest 5 percent of families rose even more. The stagnation of the incomes of families at the lower end of the spectrum is also reflected in the nation's child poverty rate, which increased by more than six percentage points between 1970 and 2011, although appears to have fallen modestly using a more comprehensive measure of poverty.<sup>3</sup> The simple consequence of these changes is that high-income families had a lot more money to spend on their children relative to families on the lower rungs of the income ladder declined. These growing income gaps translated into increased gaps between the academic achievement and educational attainments of children from high- and low-income families.

[Figure 1 here]

## **Growing gaps in achievement and attainment**

Reardon (2011) documents growth in the income-based gap in the reading skills of children over time (Figure 2). Among children who were adolescents in the late 1960s, test scores in reading of low-income children lagged behind those of their better-off peers by four-fifths of a standard deviation -- about 80 points on an SAT-type test. Forty years later, this gap was 50 percent larger, amounting to nearly 125 SAT-type points. Trends in math skill gaps were similar (Reardon, 2011). Growth in these income-based achievement gaps is surprising in light of the fact that racial gaps in test scores have diminished considerably in the fifty years since *Brown vs. Board of Education* (Figure 2; Magnuson and Waldfogel 2008).

[Figure 2 here]

Growing achievement gaps mask an important fact: achievement levels of low-children have increased over the past three decades. Figure 3 is also based on Reardon's data, but shows the absolute rather than relative achievement levels for low- and high-income children. The math scores of low-income children increased by a substantial 40 points -- .40 standard deviations -- over the 30-year period between the late 1970s and late 2000s.<sup>4</sup> Achievement *gaps* increased because the scores of children at the top of the income distribution grew at a much faster rate -- 70 points, or .70 standard deviations. So despite the steady improvements, achievement levels are falling further and further behind the achievement levels of high-income children.

[Figure 3 here]

Given the importance of academic preparation in success in post-secondary education, it should come as no surprise that growth in the income-based gaps in children's reading and mathematics achievement have contributed to a growing gap in the rate of college completion

(Figure 4, which is based on Bailey and Dynarski 2011). As with test scores, college graduation rates for children from low-income (defined as the bottom quartile) families rose – from 5% for children who were teenagers in the late 1970s to 9% for children who were teenagers in the mid-1990s. But this 4 percentage point increase was dwarfed by the 18 percentage point jump for children with family income in the top quartile, from slightly more than one-third to more than one-half. Analysts differ in their assessments of the relative importance of college costs and academic preparation in explaining the increasing gulf between the college graduates rates of affluent and low-income children in our country (Heckman and Krueger 2005). However, both are rooted, at least in part, in the growth in family income inequality.

[Figure 4 here]

### **How Rising Inequality Influences Children’s Skills and Attainment**

To understand how rising inequality in family incomes contributed to rising inequality in educational outcomes between children from low- and high-income families, we need to understand the roles of families and schools. We consider these two important contexts for children’s lives in turn.

#### ***Families***

We begin by examining the skills and behaviors of children just as they enter kindergarten. Economists and developmental psychologists define “school readiness” in various ways, but nearly all definitions include elements of both cognitive skills and socioemotional behaviors, to use the term favored by developmental psychologists (Duncan and Magnuson 2011). In the cognitive category we concentrate on concrete academic skills such as literacy (e.g., for kindergarteners, decoding skills such as beginning to associate sounds with letters at the

beginning and end of words) and basic mathematics (e.g., ability to recognize numbers and shapes and to compare relative sizes). Socioemotional behaviors include the ability to control impulses and focus on tasks, and a cluster of related behaviors including antisocial behavior, conduct disorders, and more general aggression.

Figure 5 plots differences in school entry skills and behaviors available in the Early Childhood Longitudinal Study – Kindergarten Cohort between children whose parental incomes placed them in the top and bottom quintiles of the income distribution. Kindergarten teachers rated kindergarteners from high-income families more than half a standard deviation ahead of those from low-income families in their abilities to pay attention and engage in school work and more than a quarter of a standard deviation higher in their abilities to get along with peers and teachers. Much more striking were differences in concrete math and literacy skills. Gaps in both of these kinds of skills exceeded one standard deviation. None of these income-based gaps had declined by the time the children were in fifth grade. One implication of these data is that large gaps are already present at the beginning of school. A second is that schools have failed to reduce gaps as children develop and grow older.

[Figure 5 here]

It is a challenge to identify the extent to which gaps in the skills and behaviors of children from low- and high-income families are caused by income itself as opposed to differences in innate capabilities or other family characteristics (e.g., two-parent family structure, parental education levels). An obvious advantage of a higher family income is that it provides more resources to buy books, computers, high-quality child care, summer camps, private schooling, and other enrichments. Figure 6 shows how spending, net of inflation, on child-enrichment goods and services increased to a far greater extent for families in the top quintile than for those in the

bottom income quintile.<sup>5</sup> In 1972-1973, high-income families spent about \$2,850 more per year (in 2012\$) on child enrichment than did low-income families. By 2005-2006, this gap had nearly tripled, to \$8,000. Kaushal, Magnuson, and Waldfogel (2011) show that spending differences are largest for enrichment activities such as music lessons, travel, and summer camps. Differential access to such activities may explain the gaps in background knowledge and vocabulary between children from high-income families and those from low-income families that are so predictive of reading skills in the middle and high school years (Snow 2002).

[Figure 6 here]

Parents also spend different amounts and quality of time interacting with their children and exposing them to novel environments, and these factors can make a difference in their development. Phillips (2011) reports some striking differences in time-use patterns between low- and high-income families, especially time spent in “novel” places. She estimates that between birth and age six, children from high-income families will have spent 1,300 more hours in novel contexts (that is, other than at home, school, or in the care of another parent or a day care provider) than children from low-income families. These experiences, financed in part by the higher incomes of more affluent families, contribute to the background knowledge that is so critical for comprehending science and social studies texts in the middle-school grades.

The money and time expended on behalf of children also differ markedly between single- and two-parent families. Sweeney (2011) shows that increases in both marital disruption and births to unmarried women have fueled a large rise in the proportion of children living with only one biological parent. These trends are particularly pronounced among African-American children. Numerous studies have established that children who grow up with two biological parents attain more schooling than children who do not. Income differences are a leading

explanation for these effects, although characteristics of couples who divorce or separate also matter.

It is difficult to untangle the precise effects of all these family-related factors—income and expenditures, family structure, time and language use—on the disparities in children’s school readiness and later academic success that have emerged over the past several decades. But evidence establishing causal links between family income and children’s school achievement suggests that the sharp increase in income gaps between high- and low-income families since the 1970s and the concomitant increases in the gaps in children’s school success by income are hardly coincidental (Maynard 1977; Maynard and Murnane 1979; Duncan, Ziel-Guest, and Kalil 2010; Dahl and Lochner 2013). While some children have always enjoyed greater benefits and advantages than others, the income gap has widened dramatically over the past four decades and the implication of these research studies is that, partly in consequence, the gap in children’s school success has widened as well.

### ***Schools***

Researchers have long known that children attending schools with mostly low-income classmates have lower academic achievement and graduation rates than those attending schools with more affluent student populations. Less well understood until recently is the extent to which increasing family income inequality contributed to the segregation of low-income children in particular schools (which we call high poverty schools) and the mechanisms through which school segregation by income affects children’s developmental trajectories and long-run outcomes.

One pathway through which the increase in income inequality contributed to increases in inequality in educational outcomes is through increases in residential segregation by income and

the school segregation by income it engendered. As high-income families became wealthier, they tended to move to neighborhoods in which high housing prices excluded all but the affluent. This left other neighborhoods populated by primarily low-income families. Reardon and Bischoff (2011) and Bischoff & Reardon (forthcoming) document that residential segregation by income increased dramatically between 1980 and 2009. Since most American children attend school close to home, it is not surprising that school segregation by income also increased during this period (Altonji and Mansfield 2011; Owens 2014; Owens, Reardon, and Jencks 2014). Duncan and Murnane (2011, 2014) explain three mechanisms through which the increased concentration of children from low-income families in high-poverty schools reduced their effectiveness.

From 1972 to 1988, schools became more economically segregated, and teenagers from affluent families were less and less likely to have classmates from low-income families. The result is that a child from a poor family is two to four times as likely as a child from an affluent family to have classmates in both elementary and high school with low skills and with behavior problems (Duncan and Murnane 2011). This sorting matters, because the weak cognitive skills and greater behavioral problems among low-income children have a negative effect on the learning of their classmates.

Student mobility is another mechanism through which the increasing concentration of low-income children in high poverty schools reduces their achievement. Urban families living in poverty move frequently, and as a result of school sorting by socioeconomic status, children from poor families are especially likely to attend schools with relatively high rates of new students arriving during the school year. Raudenbush, Jean, and Art (2011) document that children attending elementary schools with considerable student mobility make less progress in

mathematics than do children attending schools with a low level of student mobility. Moreover, the negative effects apply to students who themselves are residentially stable as well as to those who are not, and likely stem at least in part from the disruption of instruction caused by the entry of new students into a class.

Teacher quality is another factor contributing to the weak academic performance of students in high-poverty schools. A substantial body of research has shown that schools serving high concentrations of poor, non-white, and low-achieving students find it difficult to attract and retain skilled teachers. Boyd et al. (2011) investigate the extent to which neighborhood characteristics affect teachers' decisions about where to teach. In addition to preferring schools with relatively low proportions of non-white and low-achieving students, teachers also favor schools in neighborhoods with higher-income residents and less violent crime. This is consistent with the evidence of Kirk and Sampson (2011) showing that schools with a large percentage of students who have been arrested do not function as well as other schools. Teacher commitment, parental involvement, and student achievement in these schools all tend to be low. Such schools are also likely to be in high-crime neighborhoods, although it is important to note that student arrest rates are not high in all schools located in high-crime neighborhoods.

In summary, the decades-long increase in family income inequality has contributed to increasing gaps in educational achievement and attainment between children growing up in low- and high-income families. Some of the mechanisms concern family life directly. Others concern growing isolation of low-income children in high-poverty schools.

### **Improving the Education of Low-Income Children**

For most of its history, the United States has relied on its public schools to solve difficult social problems. In the 19<sup>th</sup> century, the country was a leader in providing universal primary



schooling. During the first three-quarters of the twentieth century, schools successfully taught generations of students the basic reading and mathematical skills they needed to fill the large number of assembly-line and back-office clerical jobs that the economy was producing (Goldin and Katz 2008). Can the nation's schools meet the current challenge of providing all students with the skills they will need to thrive in the rapidly changing economy and society of the 21<sup>st</sup> century?

### ***The Difficult Challenge***

It will be extraordinarily difficult to reverse the striking growth in inequality in educational outcomes in the United States for three separate, but interrelated reasons. First, high-income parents, most of whom have college degrees, can invest in their children's education by choosing where to live and which schools their children will attend, and by using their financial resources and knowledge to help their children acquire skills and knowledge beyond what is taught in school. In contrast, low-income parents, most of whom have no postsecondary education, lack the resources to provide for their children's education in the same ways. Figure 5 showed that inequality is evident early: low-income children lag well behind children from higher-income families by the time they enter kindergarten. Differences between schools serving high- and low-income children reinforce the trend toward greater inequality.

A second factor challenging American education is the increase in the skills students are expected to master. The increase stems from the realization that computer-based technological changes and globalization have eliminated many repetitive jobs that paid good wages in the past and increased the demand for analytical problem-solving skills and communication skills (Levy and Murnane 2004). In response to these changes in the economy, almost all states introduced standards-based educational reforms aimed at assuring that all students master higher-order skills

that only a modest minority of students learned in the past. Figure 7, which compares questions on math tests administered to 6<sup>th</sup> graders in the early 1980s (left column) and in 2011 (right column) illustrates the increase in skills students are expected to master. Standards-based educational reforms make sense as a response to a changing economy. However, they increase the burden on high-poverty schools serving students who lack the vocabulary and background knowledge that are especially important in mastering more demanding skills.

[Figure 7 here]

A third factor hindering efforts of American educators to level the playing field is decentralization of governance. The U.S. Constitution delegates the governance of public education to the states, which in turn, delegate decisions about curricula and teacher salaries to more than 14,000 local school districts. A consequence of this decentralization is that changes in national priorities for education pass through many levels of government, each of which provides its own interpretation of the change. The net result is that policy changes often have only modest effects on classroom instruction and the educational experiences of children (Cohen and Spillane 1992).

As we explain in the second part of our recent book, *Restoring Opportunity: The Crisis of Inequality and the Challenge for American Education*, the difficulty of improving classroom instruction and enriching the educational experiences of children, especially those attending high poverty schools, is documented in research on the consequences of the three major policy initiatives designed to improve the education of disadvantage children over the last 50 years: more money, more accountability, new governance structures. We summarize themes from this research briefly.

*More Money.* As a result of successful suits filed in state courts on behalf of families in low-spending districts, many states substantially increased funding of public education during the 1970s and 1980s. The federal government has also contributed to the funding of high-poverty schools with the passage of the Elementary and Secondary Education Act (ESEA) of 1965. In fiscal year 2013, Title 1 of ESEA provided more than \$14 billion dollars for compensatory education. While analysts disagree on some of the consequences of increased school funding, few, if any, believe that it has been effective in closing income-based gaps in children's achievement. One reason is that a substantial part of state and federal education funding replaced locally raised tax revenues for schooling (Gordon 2004). A second is that relatively few school leaders have successfully used extra funds to improve teaching, a process that requires opening up classrooms to frequent observation by supervisors and peers, and enlisting all teachers in collaborative efforts to make instruction more coherent and consistent. Instead, most have used Title I funds to purchase goods and services that have little impact on the work teachers do with students, and consequently, little impact on student achievement.

It is important to note that almost all research on the impact of additional school funding on student achievement antedates standards-based educational reforms. Consequently, little is known to date about the role of funding in contributing to student achievement in an environment in which school-based educators are under considerable pressure to increase the skills of all students. One reason to conclude that funding does matter in this environment is the success of standards-based educational reforms in Massachusetts, where a quite stringent accountability system was accompanied by substantial increases in state funding for education. One result has been dramatic improvement in the mathematics and reading scores of Massachusetts students on the National Assessment of Educational Progress and on international

test score comparisons. Another is a decline in the sizes of gaps in educational outcomes between Massachusetts students from low- and high-income families (Papay, Murnane, and Willett forthcoming). A second reason to conclude that money matters in education if used well is that all of the successful educational initiatives we describe below required significant financial resources.

*Test-based Accountability.* Frustrated that simply increasing funding had yielded no dramatic improvement in public education, state policy makers turned to standards-based educational reforms in the late 1980s and 1990s. The basic idea was to specify the skills students should master at each grade level and develop assessments to measure the extent to which children mastered them. Over time, standards-based reforms morphed into test-based accountability, with the emphasis on holding schools accountable for children's mastery of the skills laid out in state standards. Passage of the No Child Left Behind Act in 2001 made this federal policy.

Educators' responses to accountability pressures have not consistently improved educational quality. NCLB created incentives for states to choose relatively undemanding tests and set low proficiency thresholds. Moreover, some schools, particularly those with the least capacity to educate children well, responded to accountability pressures by narrowing the curriculum and focusing undue attention on students with scores just below proficiency, neglecting children with lower scores. The basic problem is that many school faculties, especially in high-poverty schools, lack the knowledge to increase substantially the skills of their students. Accountability without supports to succeed in the requisite work does not serve children well.

Getting accountability right is especially difficult in the transition to the Common Core. States now hold teachers accountable for students' scores on existing tests that emphasize mastery of procedural skills while at the same time asking them to prepare students to demonstrate mastery on new assessments that emphasize the more difficult conceptual skills embedded in Common Core standards.

*New Governance Structures.* Some analysts have argued that the reason why more money and test-based accountability have not produced markedly better education for low-income children is that a great many school districts, especially those in big cities, are dysfunctional (Chubb & Moe 1990). An implication is that changes in governance structures may be needed. This provides one of the arguments for charter schools, which are publicly funded schools typically governed by a group or organization under a legislative contract (or charter) with the state or jurisdiction. The charter exempts the school from certain state or local rules and regulations. In return for autonomy, the charter school must meet the accountability standards stated in its charter. Currently there are almost 6,000 charter schools in the country, serving almost 5 percent of the nation's public school students. Some charter schools have produced dramatic improvement in their students' skills (see, for example, Abdulkadiroglu et al. 2011; Dobbie and Fryer 2011). However, the best available evidence is that most charter schools are not more effective than conventional public schools at improving the skills of low-income children (National Charter School Study 2013).

In summary, the three dominant reform strategies that the U.S. has employed to improve the education of disadvantaged children in recent decades have had at best modest success. None has succeeded in closing the growing gaps in educational achievement and attainment between children from low- and high-income families. The attraction of these strategies is that they are

actions that policymakers at the state and federal level can carry out. The limitation is that, in the American context, they have not resulted in consistent improvement in the quality, coherence, and consistency of instruction in high-poverty schools.

### **Building Blocks for an American Solution**

It is easy to dwell on the characteristics of American education that make constructive change difficult. However, there are also strengths to build on. Of particular importance are educational interventions conducted at considerable scale in which rigorous evaluations show impacts on the skills of a substantial number of low-income children. In *Restoring Opportunity* we feature three such programs – the Boston pre-K program, the campuses of the University of Chicago charter school, and New York City’s small high schools of choice. These innovative, quite durable programs provide existence proofs that it is possible to improve the education of substantial numbers of low-income children.

These programs provide truly exceptional quality of education to the low-income children they serve. Importantly, they also share key characteristics that can help guide thinking about the broader changes needed to improve the education of a much greater number of low-income children. The characteristics include making use of *advances in knowledge* about the components of good pre-K, elementary school, and high school education; strong, sustained *school supports*; *sensible accountability*; and embrace of the quite demanding academic standards that are embodied in the *Common Core State Standards*. Together, these constitute the building blocks needed to bring about genuine improvement in the life chances of low-income children. We consider these in turn.

### *Advances in Knowledge*

Increased understanding of the nature of children's and adolescents' cognitive and socioemotional development, of effective way to enhance literacy and numeracy skills, and of the design of effective professional development have expanded the knowledge available to educators about how to serve children well. For example, the designers of the Boston pre-K program made use of recent research on key elements of children's language, mathematics, and socio-emotional skills in selecting curricula that allowed children to develop these skills through hands-on exploration and group interactions. Indeed, Boston was able to take advantage of lessons learned from the rigorous evaluations of a growing number of preschool curricula that have been supported by funding from several federal government agencies and private foundations.

The principals of the University of Chicago Charter School campuses were aware of research showing that a lack of vocabulary and background knowledge prevents many low-income children from comprehending texts in core subject areas such as science and social studies. This led them to adopt curricula and pedagogical strategies aimed at building children's knowledge and vocabulary from the start of kindergarten. They also knew about research showing that effective professional development is a process, not an event; that it focuses on methods for teaching particular skills; that observing effective instruction should be part of the learning process; and that it is important for novices to observe effective instruction and receive detailed feedback on the strengths and weaknesses of their own teaching.

The innovators who developed principles for New York City's new small high schools incorporated their knowledge of adolescent development and the skills young people need into the requirements for the proposals they solicited. For example, the requirement that every small

school of choice have community partners was based on an understanding that adolescents need exposure to a variety of role models and opportunities to do authentic work.

In preparing ninth graders to do high school work, the faculties of many of the New York small high schools took advantage of knowledge that the skills needed for science literacy are different from those needed for literacy in social studies. As a result, literacy skills were seen as a critical element of the work of all faculty members, not just English teachers. The faculties of the small high schools we highlight also knew about the research on “summer melt,” the phenomenon that many low-income students graduate from high school intending to enroll in college the next fall, but do not follow through because of the complexity of the financial aid application process and fear of the unknown (Castleman and Page 2014). As a result, the schools developed strategies to support recent graduates during the period of transition to college.

### ***Supports and Support Organizations***

Preparing large numbers of low-income children to meet demanding academic standards is extremely difficult work. Most schools serving low-income students lack the human resources and the knowledge to do this work successfully without strong, sustained supports. Commonly needed supports include technical expertise and resources for developing curricula, planning and implementing effective professional development, dealing with emotionally troubled children, and learning to use student assessment results to guide instructional improvement. But even these supports are not enough.

The experiences of high-poverty schools that have made progress in educating low-income children—like many of those profiled in *Restoring Opportunity*—show that it takes more than simply providing good instruction for six hours per day (Dobbie and Fryer 2011 ).

Typically the school day starts early in these schools, usually with breakfast for the children. It



continues until late in the afternoon, providing time for remediation of lagging skills and exposure to enrichment activities. Many of these schools offer instruction on Saturdays and well into the summer months. Unlike typical afterschool and summer programs that do not improve student outcomes because they are disconnected from the core instructional program, the extended-day and extended-year programs in effective high-poverty schools are well-integrated parts of a coherent strategy to continually build children's skills. Another benefit of such a comprehensive approach to schooling is that the school becomes the center of children's daily experiences, which reduces their exposure to the lures and dangers of the neighborhood. The argument that schools can, on a sustained basis, significantly improve life chances for large numbers of low-income children requires this broad definition of schooling. Implementing this broad and deep vision of schooling requires significant expertise and resources that most high-poverty schools lack.

The schools participating in the effective interventions we highlight had consistent access to strong school supports. In one case they came from a district central office Department of Early Childhood Education; in a second, from a charter management organization; in a third, from not-profit organizations that NYC schools contracted with to provide needed services.

Providing high-quality education on a consistent, long-term basis to low-income children requires institutions that provide consistently strong supports of the same high quality as those afforded to the schools participating in the effective programs we highlighted. The United States has yet to develop a set of institutions that do this effectively. Yet, a promising recent trend is the growing number of organizations that offer supports to public schools. Some, like the New York Leadership Academy and New Leaders for New Schools, prepare principals to create schools that are effective learning communities for both teachers and students. Others, like

Teach for America and the Boston Teachers Residency Program, recruit academically talented college graduates and support their work in high-poverty schools. Still others, like New Visions for Public Schools, the Urban Assembly, and many charter management organizations, recruit leadership teams to start new schools and provide ongoing support for those teams. And then there are the comprehensive school reform design organizations such as Success for All and America's Choice that offer detailed guidance and tools to large numbers of high-poverty schools. The challenge is to devise organizational structures that provide high-poverty schools with the resources, knowledge, and freedom to choose the collection of supports they need, with the goal of increasing the coherence and quality of students' daily experiences.

### *Accountability*

Over the last twenty years, it has come to be almost universally accepted that schools should be judged by their effectiveness in educating all students—an enormously important change in thinking. A well-designed accountability system promotes a willingness to use resources in new ways and encourages school faculties to work together to develop the skills of every student. Sensible accountability and sustained school supports are critical complements for improving schools, especially those serving high concentrations of low-income children. Accountability without supports does not do the job because most educators are already using the skills and energies they have to educate children. They need the supports that will allow them to be more successful. Supports without accountability do not work because most adults do not change their behaviors readily. Sensible accountability provides the push to embrace the opportunities provided by strong school supports and to redesign schools to make instruction more consistent and coherent and of higher quality.

Our observations, research reviews, and interviews with leaders at the North Kenwood/Oakland (NKO) campus in Chicago and the Urban Assembly School for Law and Justice (SLJ) in Brooklyn revealed a strikingly consistent explanation for their success: Strong supports and internal accountability pervades teachers' work lives. (Transcripts and videos describing their work are available at [restoringopportunity.com](http://restoringopportunity.com).)

Carrie Walsh, director of NKO, uses every opportunity to develop teachers' skills, including teacher evaluations. She videotapes and transcribes teachers' lessons, and points out particular areas where improvement is needed. "It could be something as simple as...you're just calling on boys all the time and girls actually are hesitant about raising their hand in your class."

Part of SLJ Principal Suzette Dyer's effort to be accountable to the teachers in her school is that she and her leadership team "sit together weekly and create the protocols that we want grade teams and departments to use when they're talking about student work, when they're talking about lesson plans, when they're thinking about end-of-the-year outcomes. . . ."

To help reduce the isolation that many teachers experience, both schools work at creating a culture in which accepting and offering criticism is a normal and positive part of a teacher's job. Tanika Island, chief academic officer for NKO, acknowledges that no one wants to hear that something they've put a lot of effort into isn't quite right. "You have to train teacher leaders and teachers to be open-minded, to be willing to take feedback, and that takes time," she said. "You have to practice doing that together. And you have to model [that] for teachers."

These schools offer lessons that other schools can take advantage of. First, it is possible to improve the quality and consistency of instruction in high-poverty schools. Second, it takes consistently strong supports and internal accountability. Without strong school supports *and*

internal accountability, external pressure to improve student scores will fail. Third, progress takes time.

As the mounting evidence on the weak effects of No Child Left Behind illustrates, it is extraordinarily difficult to design accountability systems that take into account the intense challenges of educating high concentrations of low-income children (Dee and Jacob 2011). There will be much to learn from the alternative accountability systems put in place by states that have been granted NCLB waivers. Without downplaying the immense challenge of getting accountability right, it is important to remember the value of judging schools by their effectiveness in educating the students they serve rather than by their adherence to rules regarding the uses of resources. A litmus test of the promise of particular accountability systems is the extent to which they provide incentives for skilled teachers to work together in high poverty schools.

### ***The Common Core State Standards***

The Common Core Standards outline the skills in English language arts and mathematics that American students are expected to master at each grade level from kindergarten through twelfth grade. As of this writing, forty-five of the country's fifty states have adopted these standards, which set goals that are considerably higher than the accomplishments of most American students, especially those from low-income families.

Creating the Common Core Standards in English language arts and mathematics is an important step in preparing American students to thrive in a rapidly changing economy and society. Carefully designed to reflect the latest research, the standards can offer teachers and school leaders a fundamental school support: clarity about the conceptual and procedural skills children should master in each grade. And the assessments that two consortia of states are

developing to measure students' mastery of the Common Core Standards can provide another critical school support: detailed information for teachers about children's mastery of essential skills and knowledge. These are remarkable accomplishments, reflecting a level of rigor and a degree of cooperation among states that few observers of American education would have thought possible thirty years ago.

Of course, common standards and high-quality assessments alone do not produce better teaching, nor do they enhance student learning. Indeed, the Common Core State Standards represent only an early step down a long path leading to better education for all American children. Yet clarity about the specific skills students should master at each grade level makes it possible to improve teacher training programs and on-the-job professional development. The standards can also facilitate the development of curricula and assessments that are closely aligned with their content. Better teacher preparation and better curricula are essential elements for improving teaching and learning.

Support for the Common Core Standards is widespread but fragile. One reason for the fragility is that the introduction of student assessments aligned with the Common Core are starting to show that a great many students, especially those from low-income families, have not met the new standards. We caution against letting high-stakes accountability get ahead of the difficult work of providing educators in high-poverty schools with the knowledge and extensive school supports they will need to help their students master the Common Core Standards. Only if consistent, strong supports are in place can accountability improve the education of low-income children. In other words, strong supports and well-designed accountability are essential complements, not substitutes. Moreover, accountability that improves education in high-poverty

schools must encourage and not undercut the shared work that allowed the schools we highlight to serve low-income students much more effectively than most high-poverty schools do.

### **Meeting the Challenge**

Relying on the heroic efforts of charismatic leaders who create schools that “beat the odds” will not solve the nation’s most pressing education problem. These leaders produce results by devoting vast amounts of time to recruiting teachers who share their vision and are willing to work very long hours creating curricula, offering extra instruction, and providing emotional support to students from troubled homes. The efforts of such educators are laudable and are the subjects of many heartwarming media stories. However, all too often, the successes of such schools are short-lived, as leaders move on and teachers burn out (Harris 2007). Meeting the educational needs of low-income students must be done by creating the conditions for systems of effective schools rather than by relying on exceptions.

The Boston Pre-K program, the University of Chicago charter school campuses, and the New York City small schools of choice provide existence proofs that it is possible to create the conditions necessary for networks of schools to educate low-income children and adolescents well. They share common characteristics that could inform the design of other successful networks. However, at this time most high-poverty schools do not operate in environments that provide the combination of sustained supports and sensible accountability necessary for success.

There are many reasons why the central offices of public school districts, particularly those in big cities, do not provide schools with the combination of sustained supports and sensible accountability necessary for success. They include conflicting priorities of school-board members and other civic leaders, brief tenures of district superintendents, and bureaucracies with many non-coordinating silos. Changing this situation is a necessary condition for improving

urban education. Evidence from Montgomery County, Maryland, Long Beach, California, and Aldine, Texas show that it is possible to do so.<sup>6</sup> Evidence from Achievement First, an effective network of charter schools, provides an alternative model for supporting schools and holding them accountable.<sup>7</sup> It is not clear at this point which model or combination of models holds the most promise. However, it is clear that developing systems of supports and accountability is a necessary condition for improving the education of low-income students.

We want to be clear about the implications of our research for school funding levels. There is ample evidence that simply spending more money will not produce better education. Indeed, in many schools and districts, money can be used much more effectively. However, in many schools serving large numbers of disadvantaged children, implementing the effective strategies we describe in *Restoring Opportunity* will cost more money. These expenditures, appropriately targeted and carefully assessed, represent an essential investment in the nation's future.

Can schools make a meaningful contribution to alleviating the growing inequality in educational outcomes between children from low- and high-income families? The answer to this question will have a profound impact on the nation's future. The answer depends on the nation's commitment to supporting a broad and comprehensive definition of schooling, its recognition of the immense challenges high-poverty schools face, and its willingness to find ways to provide the consistently strong school supports and well-designed accountability necessary for lasting success.

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## Endnotes

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<sup>1</sup> This chapter draws from the introductory chapter in Duncan and Murnane (2011), from our 2014 book, and from another paper published in 2014. We thank the Russell Sage Foundation and the Spencer Foundation for supporting the research and allowing us to summarize the lessons from our books here.

<sup>2</sup> All dollar figures in this paper are expressed in 2012 dollars, and consequently are net of inflation. The income figures are drawn from the Current Population Survey and described in Duncan and Murnane (2014). We are grateful to Sean Reardon and Demetra Kalogrides for supplying these data. Note that they are weighted by children rather than families or households, which produces a somewhat different time series than one sees with published Census data on family incomes.

<sup>3</sup> Official poverty data are based on a measure of family economic resources using cash incomes and do not reflect the growing value of near-cash transfers such as food stamps and the Earned Income Tax Credit. Moreover, the thresholds used in the poverty calculations are not adjusted for changes in living standards. Fox et al.'s (2013) calculation of poverty trends for children using a more comprehensive measure of poverty shows that it fell by about three percentage points between 1970 and 2011.

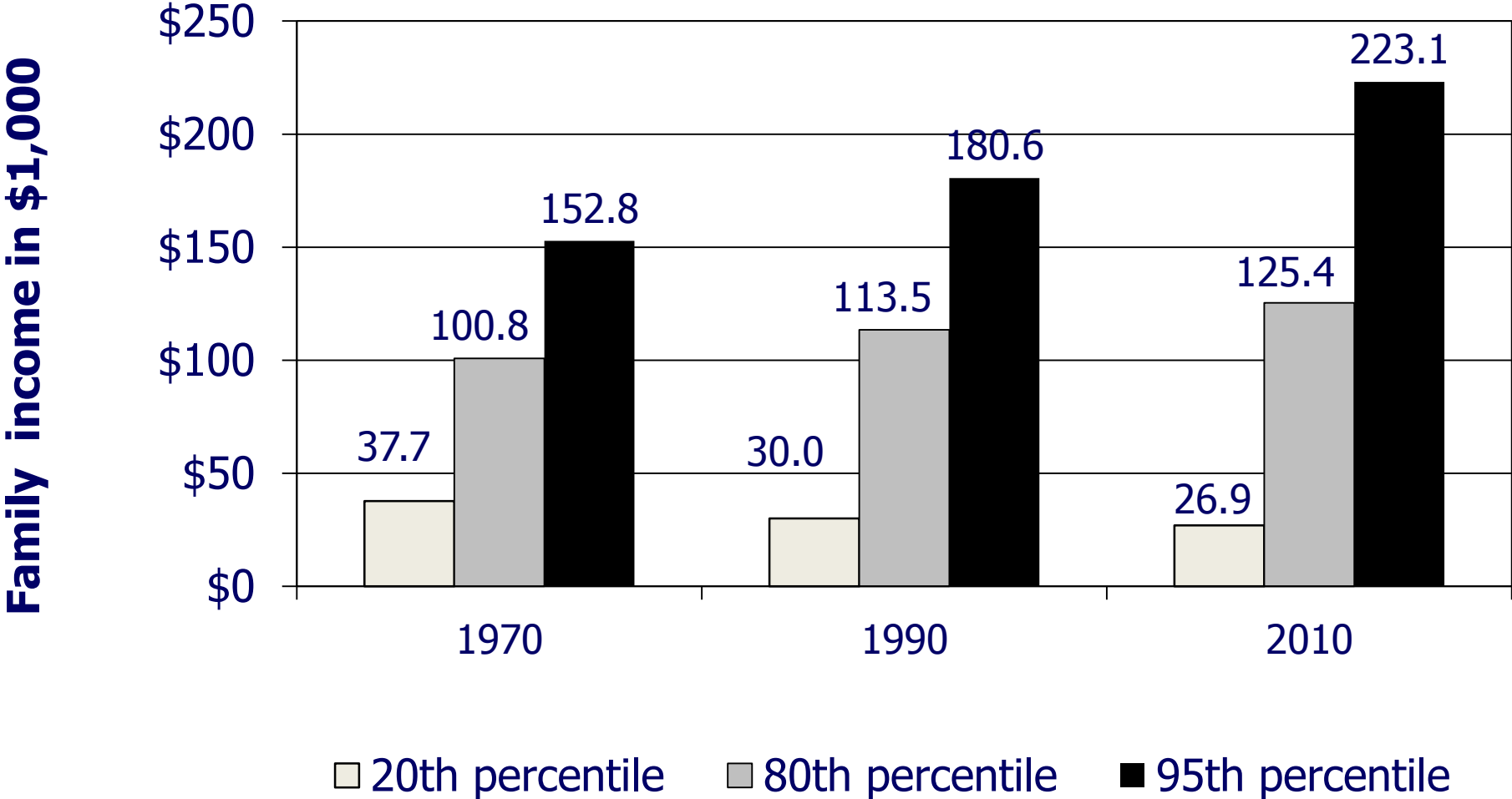
<sup>4</sup> The average reading skills of low-income students also increased during this period, albeit at a slower and less stable rate.

<sup>5</sup> All dollar amounts are expressed in 2012 price levels. We are very grateful to Sabino Kornich of the Center for the Advanced Studies in the Social Sciences at the Juan March Institute in Madrid for providing these data, which are based on four large consumer expenditure surveys conducted between the early 1970s and 2005-2006.

<sup>6</sup> See Childress, Doyle, and Thomas 2009; Childress, Grossman, and King 2011; Austin, Schwartz, and Suesse 2006.

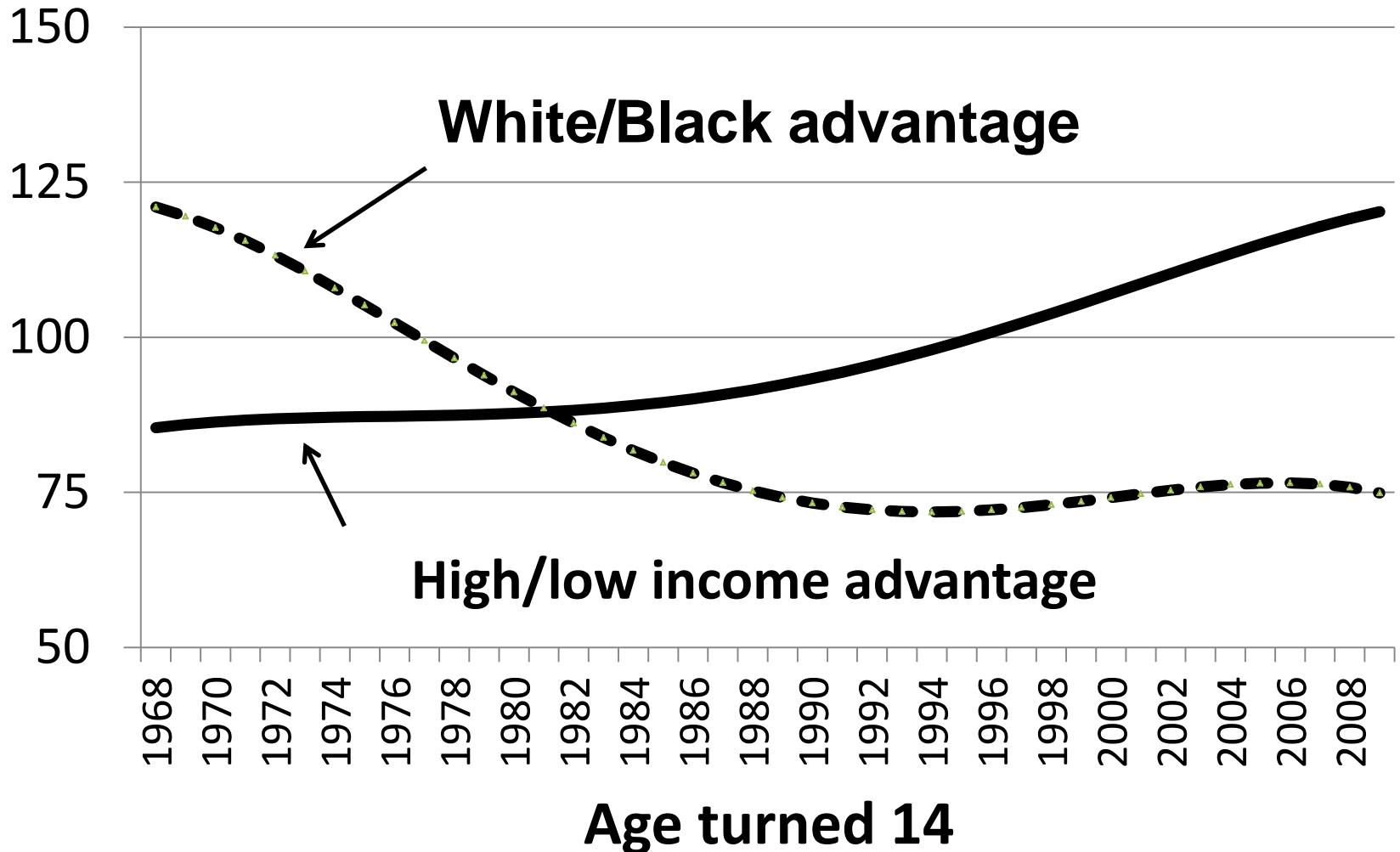
<sup>7</sup> See Promising Practices in Professional Growth & Support: Case Study of Achievement First 2013.

# Figure 1: Children's family income over time

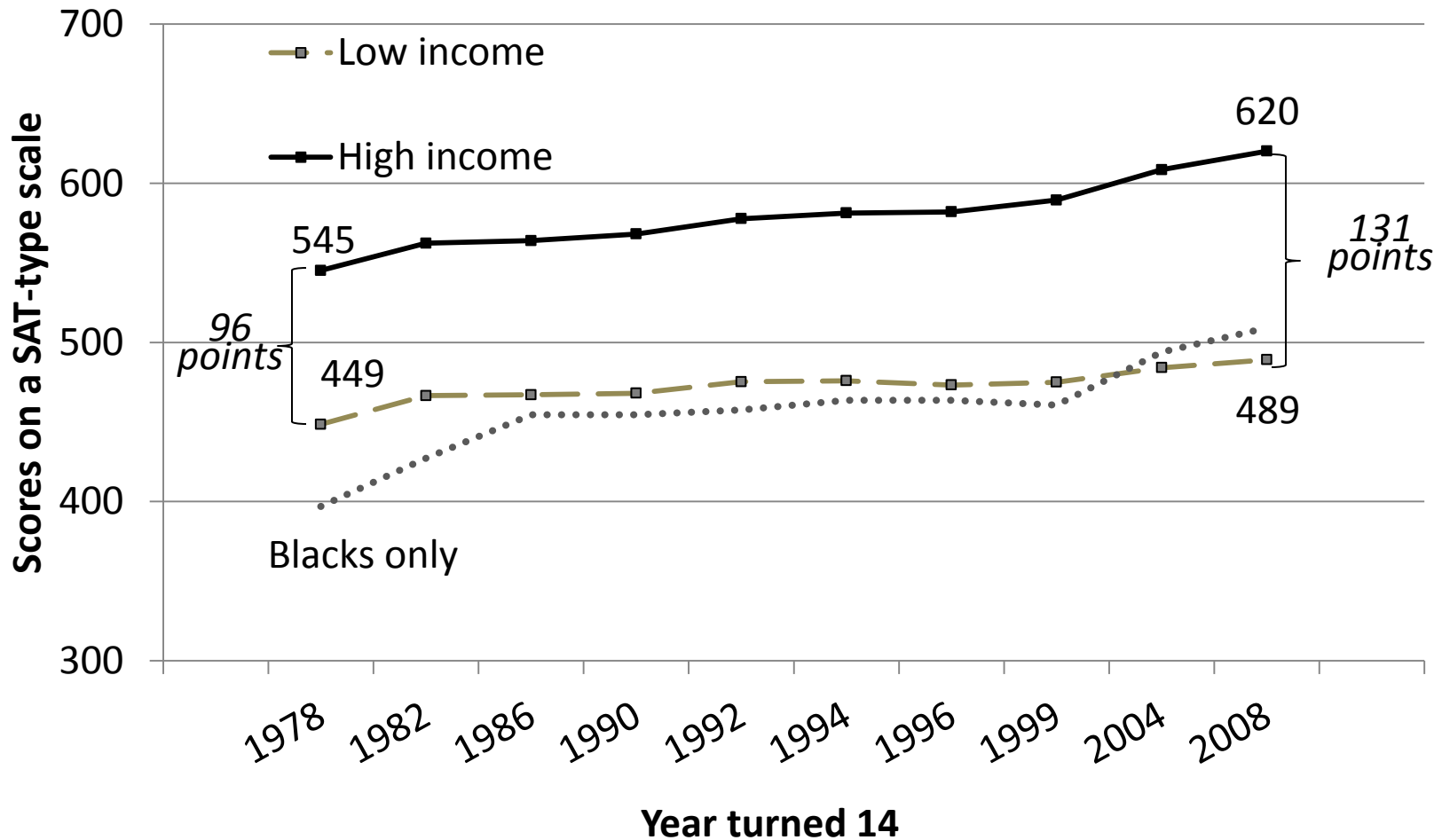


Note: Chart shows 20<sup>th</sup>, 80<sup>th</sup> and 95<sup>th</sup> percentiles of the distribution of family incomes for all children age 5-17. They based on data from the U.S. Bureau of the Census and are adjusted for inflation. Amounts are in 2012\$. Reprinted with permission from *Whither Opportunity?* 2011 © Russell Sage Foundation.

Figure 2: Race and income-based gaps in reading achievement in SAT-type units



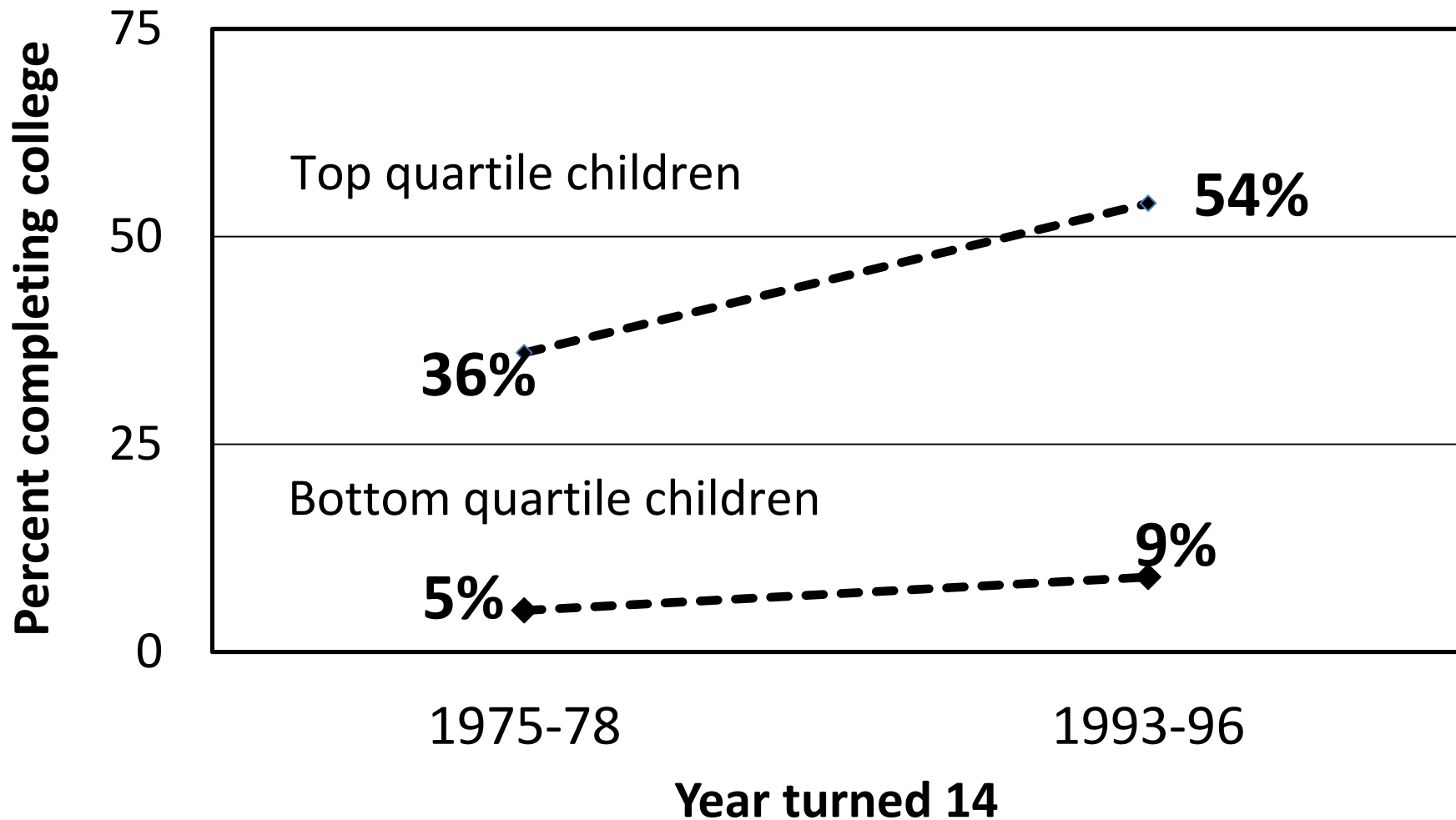
# Figure 3: Math achievement for low and high income children



Source: Authors' calculations based on data presented in Reardon (2011)

"Low" and "high" incomes are defined as the 10<sup>th</sup> and 90<sup>th</sup> percentiles of the parent income distribution.

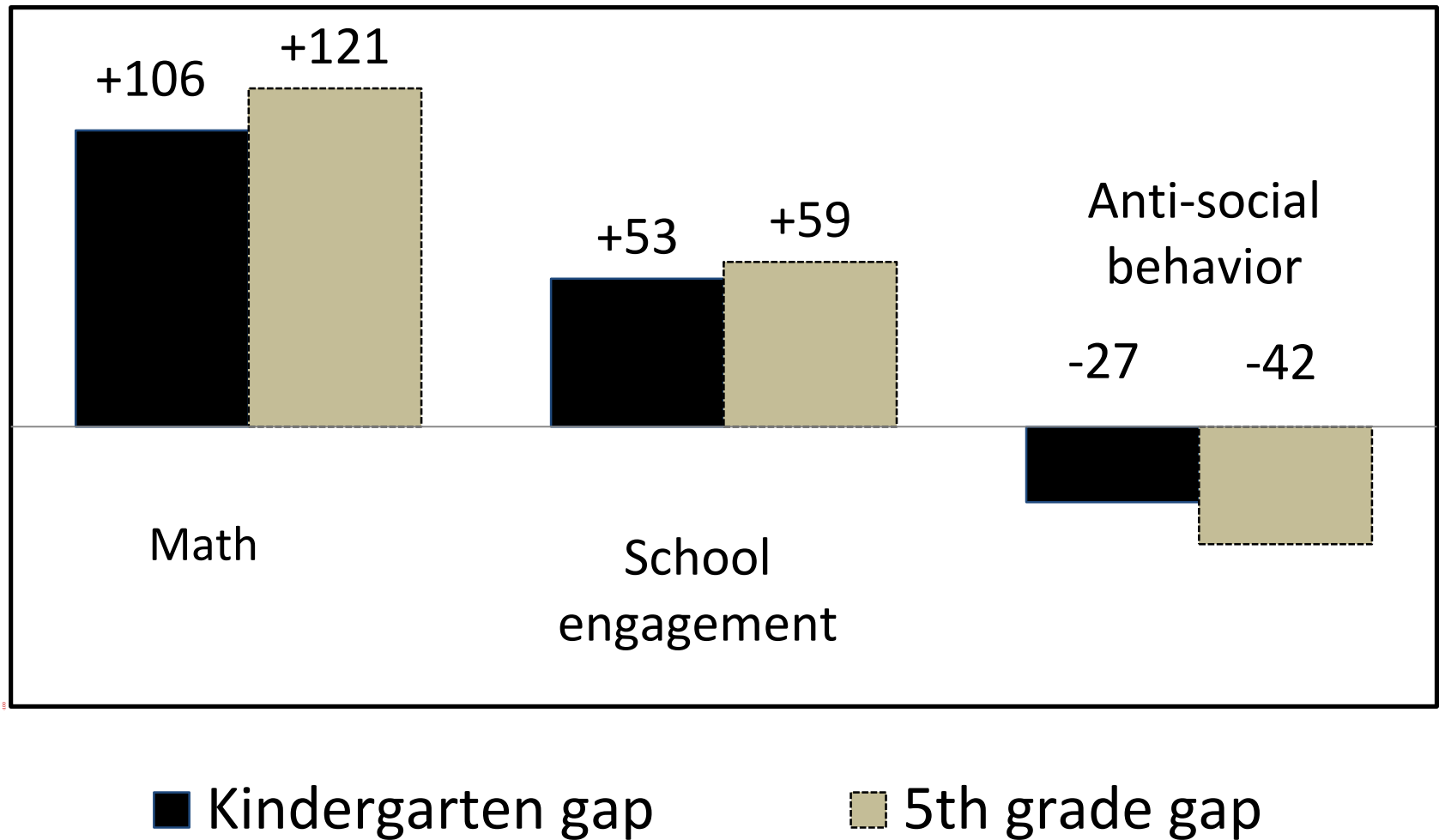
# Figure 4: College graduation rates for high and low income children



Bailey and Dynarski (2011). Reprinted with permission from *Whither Opportunity?* 2011 © Russell Sage Foundation.

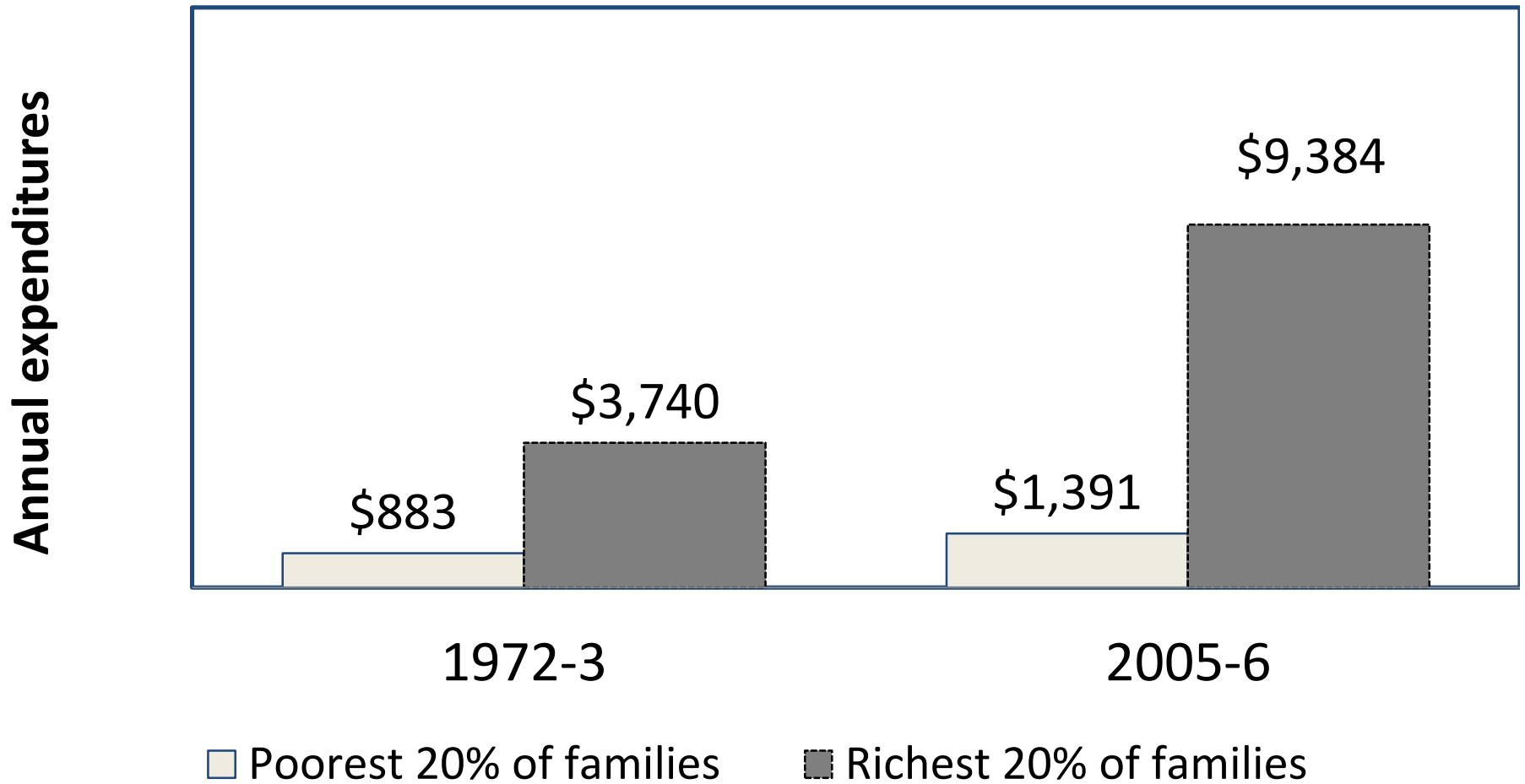


Figure 5: Skill and behavior gaps between high- and low-income kindergarteners and fifth graders



Source: Early Childhood Longitudinal Study – Kindergarten cohort. “High” and “low” income is defined by the top and bottom quintiles of the family income distribution.

# Figure 6: Family enrichment expenditures on children



Authors' calculations based on data from the Consumer Expenditure Surveys. Amounts are in 2012\$. Reprinted with permission from *Whither Opportunity?* 2011 © Russell Sage Foundation.

## Figure 7: QUESTIONS REFLECTING 6th GRADE MATH STANDARDS

Early 1980s

Carol can ride her bike 10 miles per hour.

If Carol rides her bike to the store, how long will it take?

To solve this problem, you would need to know

A. How far it is to the store.

B. What kind of bike Carol has.

C. What time Carol will leave.

D. How much Carol has to spend.

2011

Question 17 is an open-response question.

- BE SURE TO ANSWER AND LABEL ALL PARTS OF THE QUESTION.

- Show all your work (diagrams, tables, or computations) in your Student Answer Booklet.

- If you do the work in your head, explain in writing how you did the work.

Write your answer to question 17 in the space provided in your Student Answer Booklet.

Paige, Rosie, and Cheryl each spent exactly \$9.00 at the same snack bar.

- Paige bought 3 bags of peanuts.

- Rosie bought 2 bags of peanuts and 2 pretzels.

- Cheryl bought 1 bag of peanuts, 1 pretzel, and 1 milk shake.

a. What is the cost, in dollars, of 1 bag of peanuts? Show or explain how you got your answer.

b. What is the cost, in dollars, of 1 pretzel? Show or explain how you got your answer.

c. What is the total number of pretzels that can be bought for the cost of 1 milk shake? Show or explain how you got your answer.