

The Widening Income Achievement Gap

Sean F. Reardon

If we do not find ways to reduce the growing inequality in education outcomes—between the rich and the poor—schools will no longer be the great equalizer we want them to be.

Has the academic achievement gap between students from high-income and low-income families changed in the last few decades? And if so, why?

Historically, low-income students as a group have performed less well than high-income students on most measures of academic success—including standardized test scores, grades, high school completion rates, and college enrollment and completion rates. Countless studies have documented these disparities and investigated the many underlying reasons for them. But no research had systematically investigated whether these income-related achievement gaps have narrowed or widened over time.

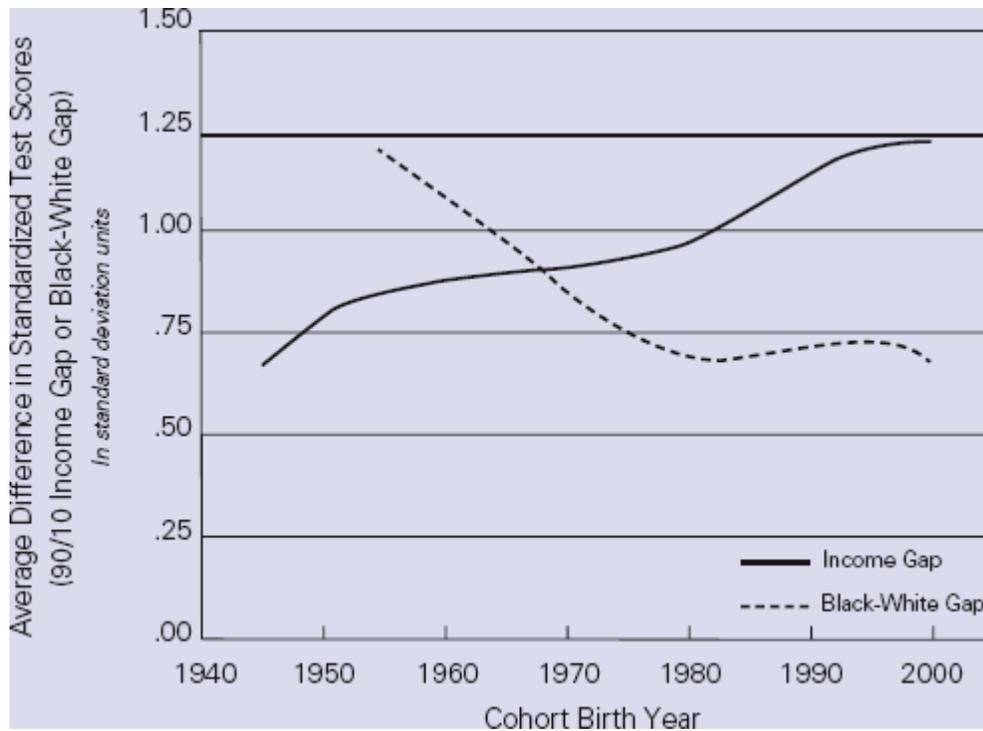
To answer this question, I conducted a comprehensive study of the relationship between academic achievement and family income in the United States over the last 50 years. I used data from 12 nationally representative studies that included information on family income and student performance on a standardized test in math or reading. Because each of the tests measured reading and math skills on a different scale, I standardized all the test scores and expressed the *income achievement gap* in standard deviation units (Reardon, 2011).

Striking Findings

Finding 1: The income achievement gap has grown significantly in the last three decades.

Among children born in the 1950s, 1960s, and early 1970s, the reading achievement gap between those from high-income families (at the 90th percentile of the income distribution) and those from low-income families (at the 10th percentile) was about 0.9 of a standard deviation. As illustrated in Figure 1, this gap began to widen beginning with the cohorts born in the mid-1970s. Among those born 20–25 years later, the gap in standardized test scores was roughly 1.25 standard deviations—40 percent larger than the gap several decades earlier.¹

FIGURE 1. Income Achievement Gap and Black-White Achievement Gap in Reading for 1943–2001 Birth Cohorts



Source: Adapted from "The Widening Socioeconomic Status Achievement Gap: New Evidence and Possible Explanations" (p. 98) by S. F. Reardon, in R. J. Murnane & G. J. Duncan (Eds.), *Whither Opportunity? Rising Inequality, Schools, and Children's Life Chances*, 2011, New York: Russell Sage Foundation.

Although the trend in the income achievement gap is striking in its own right, it is even more striking when compared with the concurrent trend in the black-white achievement gap (see fig. 1). The black-white achievement gap was considerably larger than the income achievement gap among cohorts born in the 1950s and 1960s, but now it is considerably smaller than the income achievement gap. This change is the result of both the substantial progress made in reducing racial inequality in the 1960s and 1970s and the sharp increase in economic inequality in education outcomes in more recent decades.

Indeed, Figure 1 encapsulates two important trends in U.S. history over the last 50 years. In the 1950s and 1960s, racial inequality was high in virtually every domain of life—education, health, earnings, residential segregation—whereas economic inequality was lower than it had ever been in the last century (Piketty & Saez, 2003). By the early part of the 21st century, racial inequality was much lower (although far from eliminated) in terms of wages, health disparities, and residential segregation. Meanwhile, economic inequality reached historic highs (Saez, 2012). Although both remain high, economic inequality now exceeds racial inequality in education outcomes.

Finding 2: Income gaps in other measures of education success have grown as well.

Academic achievement, as measured by standardized test scores, is not the only education outcome for which disparities between high-income and low-income students have been growing. The college-completion rate among children from high-income families has grown sharply in the last few decades, whereas the completion rate for students from low-income families has barely moved (Bailey & Dynarski, 2011). Moreover, high-income students make up an increasing share of the enrollment at the most selective colleges and universities (Reardon, Baker, & Klasik, 2012)—even when compared with low-income students with similar test scores and academic records (Bailey & Dynarski, 2011; Belley & Lochner, 2007; Karen, 2002).

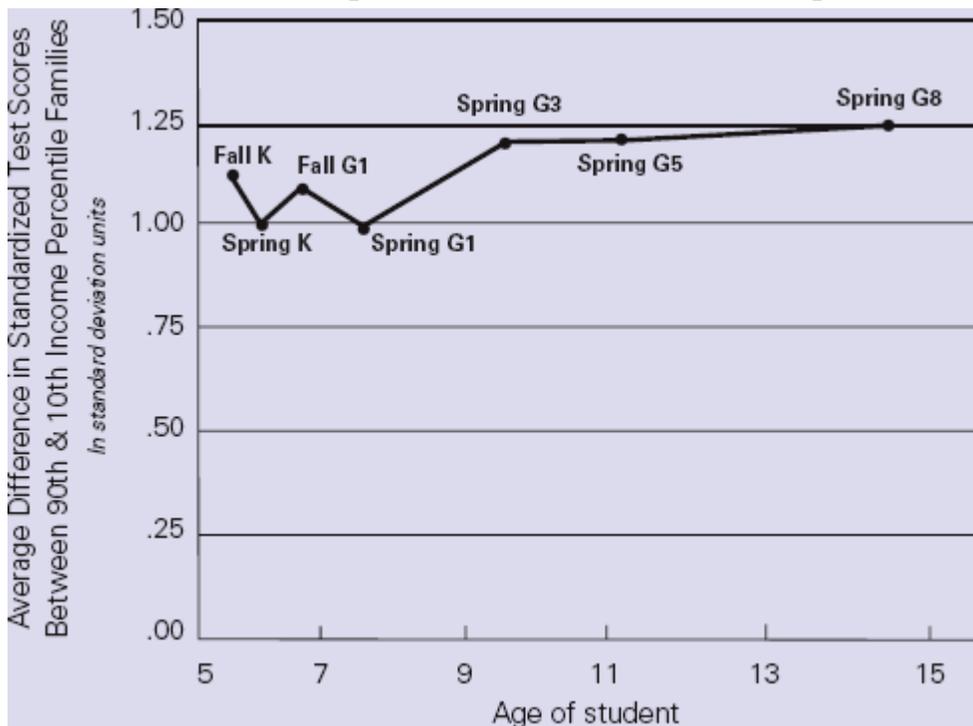
A related trend during the last 20 years is the growing social-class gap in other important measures of adolescents' "soft skills" and behaviors related to civic engagement, such as participating in extracurricular activities, sports, and academic clubs; volunteering and participating in community life; and self-reports of social trust (Putnam, Frederick, & Snellman, 2012).

Finding 3: The income achievement gap is already large when children enter kindergarten, and it does not grow significantly as they progress through school.

One possible explanation for the widening income achievement gap is that K–12 schools have grown more unequal in quality over the last few decades. If this were true, then the gap should grow larger the longer students are in school. But when I examined the data, I found little evidence that this occurs.

In one study, the Early Childhood Longitudinal Study-Kindergarten Cohort (ECLS-K), roughly 25,000 students were tested in math and literacy skills in kindergarten in 1998 and then were reassessed as many as six more times between 1998 and 2007, when the students were in 8th grade (Tourangeau, Nord, Lê, Pollack, & Atkins-Burnett, 2006). I used this study's data to examine how the income achievement gap changed as this cohort of students progressed through elementary and middle school. As Figure 2 shows, the gap in reading grew very little during this period—it was 1.15 standard deviations when the children entered kindergarten and 1.25 standard deviations in 8th grade. Other longitudinal studies that assessed students multiple times during middle and high school show the same pattern: The achievement gap changes little during the K–12 years.

FIGURE 2. Development of Income Achievement Gaps in Reading, Kindergarten–8th grade



Source: Adapted from "The Widening Socioeconomic Status Achievement Gap: New Evidence and Possible Explanations" (p. 100) by S. F. Reardon, in R. J. Murnane & G. J. Duncan (Eds.), *Whither Opportunity? Rising Inequality, Schools, and Children's Life Chances*, 2011, New York: Russell Sage Foundation.

The fact that the income achievement gap is large when children enter kindergarten—and does not grow substantially during the school years—suggests that the primary cause of the gap is *not* unequal school quality. In fact, the data in Figure 2 show that schools may actually narrow academic achievement gaps, rather than widen them. The data show the gap narrowing between the fall and spring of the kindergarten and 1st grade years—periods when students were in school—and widening in the summer between kindergarten and 1st grade—when they were not in school. Although we can't assume that the same pattern holds in later grades, the ECLS-K data do suggest that schools may reduce inequality rather than widen it. This finding is consistent with other research on the "summer setback" that has been conducted in smaller, more localized samples (for example, see Alexander, Entwisle, & Olson, 2007).

Why Has the Income Achievement Gap Grown?

To understand the reasons for the growing income achievement gap, it is necessary to look at the social history of the past 50 years in the United States. A few key trends are worth considering.

First, income inequality has risen dramatically in the last 30–40 years, making the gap in income between high-income and low-income families much greater. In 1970, a family with school-age children at the 90th percentile of the family income distribution earned 5 times as much as a family at the 10th percentile; today, the high-income family earns 11 times more than the low-income family.² This rapid growth in income inequality means that high-income families now have far more resources, relative to low-income families, to invest in their children's development and schooling.

Second, upward social mobility has become far more difficult and far less certain than it was 50 years ago, partly because of rising income inequality and partly because of declining economic growth. While the economy was growing rapidly in the 1950s and 1960s, the vast majority of children in the United States (particularly white children) grew up in families in which they were much more economically secure than their parents (most of whom had grown up during the Great Depression and World War II) had been. But beginning in the 1970s, economic growth slowed dramatically, and upward social mobility became far less certain.

Third, the economy has become increasingly bifurcated into a low-skill, low-wage sector (for example, service jobs and routine production jobs) and a high-skill, high-wage information sector (for example, engineering and financial analysis). Largely gone are the manufacturing jobs that provided a middle-class wage without a college degree. As a result, education success has become increasingly essential to economic success (Autor, Katz, & Kearney, 2008; Murnane, Willett, & Levy, 1995).

Fourth, popular notions of what constitutes education success have changed. In the last few decades, test scores have become increasingly central to our idea of what schools are supposed to produce. As test scores have played a more dominant role in education policy over the last decade (and have become more important in college admissions), they have become increasingly salient to parents concerned with their children's education success.

Fifth, American families have changed in several important ways in the last four decades. Children in high-income families are increasingly likely to be raised by two parents, both with college degrees, whereas low-income children are more likely than ever to be raised by a single mother with a low level of education (McLanahan, 2004; Schwartz & Mare, 2005). This means that family income has become increasingly correlated to other family characteristics and resources that are important for children's development.

The combination of these broad social trends has had important consequences for children's academic success. Increased uncertainty about children's likelihood of upward social mobility, coupled with the increased importance of education for career security, has made parents increasingly anxious about their children's education. This has led to greater competition among families for their children's academic success.

In summary, the growth in income inequality and in the correlation of income with other family resources means that family resources have become increasingly unequal at the same time that families are increasingly focused on their children's education, a constellation of trends that has led to a rapidly growing disparity in the extent to which families invest their time and money in their children's education. Indeed, high-income families now spend nearly 7 times as much on their children's development as low-income families, up from a ratio of 4 times as much in 1972 (Kornrich & Furstenberg, 2013).

What Role Can Schools Play?

U.S. schools have historically been thought of as the great equalizer—the social institution best suited to ensure that all children have an equal opportunity to learn, develop, and thrive. It is unrealistic, however, to think that school-based strategies alone will eliminate today's stark disparities in academic success. Economic policies that reduce inequality; family support policies that ensure children grow up in stable, secure homes and neighborhoods; and early-childhood education policies that promote cognitive and social development should all be part of a comprehensive strategy to close the economic achievement gap.

Nonetheless, schools do have a key role to play in the efforts to reduce this gap. Among the school-based strategies that might be most effective, I suggest three specific areas.

First, states and school districts could devote a greater share of their resources and efforts to the earliest grades, including kindergarten and preschool. Because achievement gaps are self-perpetuating, the earlier we intervene to reduce them, the more effective we will be at eliminating them in the long run.

Second, growing evidence suggests that more time in school (for example, extending the school day or year or providing after-school or summer-school programs) may help to narrow academic achievement gaps—if the added time is used effectively (Dobbie & Fryer, 2011; National Center on Time and Learning, 2012). Although the evidence is far from conclusive at this point, it appears to be a strategy worth pursuing.

Third, states and school districts can do more to ensure that all students have equal access to high-quality teachers, stimulating curriculum and instruction, and adequate school resources (computers, libraries, and the like). The United States has grown more residentially segregated by income over the last four decades (Reardon & Bischoff, 2011), meaning that schools have, in many places, become increasingly segregated by income as well. School districts can work against this growing segregation by developing student assignment systems that promote socioeconomic diversity within schools.

Important Consequences

The widening income achievement gap is a symptom of a confluence of trends that have accompanied and exacerbated widening income inequality in the United States over the last four decades. But it is a symptom with real and important consequences.

If we do not find ways to reduce the growing inequality in education outcomes, we are in danger of bequeathing our children a society in which the American Dream—the promise that one can rise, through education and hard work, to any position in society—is no longer a reality. Our schools cannot be expected to solve this problem on their own, but they must be part of the solution.

Trends of the Times

What is the poverty threshold in the United States for a family of four?

- \$18,000
- **\$23,000**
- \$28,000
- \$33,000

Source (for correct response): U.S. Census Bureau. Retrieved from www.census.gov/hhes/www/poverty/data/threshld/index.html

References

- Alexander, K. L., Entwisle, D. R., & Olson, L. S. (2007, April). Lasting consequences of the summer learning gap. *American Sociological Review*, 72(4), 167–180.
- Autor, D. H., Katz, L. H., & Kearney, M. S. (2008). Trends in U.S. wage inequality: Revising the revisionists. *Review of Economics and Statistics*, 90(2), 300–323.
- Bailey, M. J., & Dynarski, S. M. (2011). Gains and gaps: A historical perspective on inequality in college entry and completion. In G. Duncan & R. Murnane (Eds.), *Whither opportunity? Rising inequality, schools, and children's life chances* (pp. 117–132). New York: Russell Sage Foundation.
- Belley, P., & Lochner, L. (2007). *The changing role of family income and ability in determining educational achievement* (Working Paper 13527). Washington, DC: National Bureau of Economic Research.
- Dobbie, W., & Fryer, R. G. (2011). *Getting beneath the veil of effective schools: Evidence from New York City* (Working paper 17632). Washington, DC: National Bureau of Economic Research.
- Karen, D. (2002). Changes in access to higher education in the United States: 1980–1992. *Sociology of Education*, 75(3), 191–210.
- King, M., Ruggles, S., Alexander, T., Flood, S., Genadek, K., Schroeder, M., et al. (2010). Integrated public use microdata series, Current Population Survey: Version 3.0. [Machine-readable database]. Minneapolis: University of Minnesota.
- Kornrich, S., & Furstenberg, F. (2013). Investing in children: Changes in parental spending on children, 1972 to 2007. *Demography*, 50(1), 1–23.
- McLanahan, S. (2004). Diverging destinies: How children are faring under the second demographic transition. *Demography*, 41(4), 607–627.
- Murnane, R. J., Willett, J. B., & Levy, F. (1995). The growing importance of cognitive skills in wage determination. *Review of Economics and Statistics*, 78(2), 251–266.
- National Center on Time and Learning. (2012). *Time well spent: Eight powerful practices of expanded-time schools*. Boston: Author.

Piketty, T., & Saez, E. (2003). Income inequality in the United States, 1913–1998. *Quarterly Journal of Economics*, 118(1), 1–39.

Putnam, R. D., Frederick, C. B., & Snellman, K. (2012). *Growing class gaps in social connectedness among American youth*. Cambridge, MA: Harvard Kennedy School of Government. Retrieved from www.hks.harvard.edu/saguaro/research/SaguaroReport_DivergingSocialConnectedness_20120808.pdf

Rampey, B. D., Dion, G. S., & Donahue, P. L. (2009). *NAEP 2008 trends in academic progress*. Washington, DC: National Center for Education Statistics, U.S. Department of Education.

Reardon, S. F. (2011). The widening academic achievement gap between rich and poor: New evidence and possible explanations. In G. J. Duncan & R. J. Murnane (Eds.), *Whither opportunity? Rising inequality, schools, and children's life chances* (pp. 91–115). New York: Russell Sage Foundation.

Reardon, S. F., Baker, R., & Klasik, D. (2012). *Race, income, and enrollment patterns in highly selective colleges, 1982–2004*. Stanford, CA: Center for Education Policy Analysis, Stanford University.

Reardon, S. F., & Bischoff, K. (2011). *Growth in the residential segregation of families by income, 1970–2009* (Project US 2010 Census Brief). Washington, DC: National Bureau of Economic Research. Retrieved from www.s4.brown.edu/us2010/Data/Report/report111111.pdf.

Saez, E. (2012). *Striking it richer: The evolution of top incomes in the United States (updated with 2009 and 2010 estimates)*. Berkeley: Department of Economics, University of California, Berkeley. Retrieved from <http://emlab.berkeley.edu/~saez/saez-UStopincomes-2010.pdf>

Schwartz, C. R., & Mare, R. D. (2005). Trends in educational assortative marriage from 1940–2003. *Demography*, 42(4), 621–646.

Tourangeau, K., Nord, C., Lê, T., Pollack, J. M., & Atkins-Burnett, S. (2006). *Early childhood longitudinal study, kindergarten class of 1998–99 (ECLS-K), combined user's manual for the ECLS-K fifth-grade data files and electronic codebooks (NCES 2006–032)*. Washington, DC: National Center for Education Statistics, U.S. Department of Education.

Endnotes

¹ Analysis of data from the National Assessment of Educational Progress (Rampey, Dion, & Donahue, 2009) and from the 12 studies suggests that the income achievement gap is not widening because of declines in low-income students' performance. In fact, average test scores of both low-income and middle-income students have risen substantially in math and very modestly in reading. But they have been outpaced by high-income students, whose scores have risen even faster.

² Author's calculations, based on Current Population Survey data (King et al., 2010).