

CHAPTER 4

The Fall of Educational Productivity and Policy Paralysis

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The United States has a long history of investing in its population through public education. These investments have contributed significantly to the success of the U.S. economy. But decades of evidence now show that the education system is languishing and is not well-positioned for the 21st century.

The Importance of Educational Quality

Much of the public discussion of education focuses on school attainment—the highest level of education completed by an individual—in large part because data on school completion have long been readily available. Thus, common discussions of schooling (and the associated policy focus) involve high school graduation rates, college attendance, and college completion.

This focus on school attainment mirrors much of the historical research on the economic impact of schooling. Research into the role of investment in schooling in determining individual incomes was pioneered by Jacob Mincer.¹ Subsequently, this role was widely studied not only in the U.S. but throughout the world. This research tradition determined that investments in added schooling paid off. Moreover, with the relative rise in the value of a college education, the researchers' attention shifted in part to higher education.²

This focus on school attainment—driven both by the extensive work on individual earnings and by the ready availability of individual data—carried over to research into differences in economic growth across countries. Around 1990, economists began to study the determinants of long-run

CHART 1

NAEP Scores Have Changed Little Since Early 1970s

MATH SCORES, 17-YEAR-OLDS

320

310

300

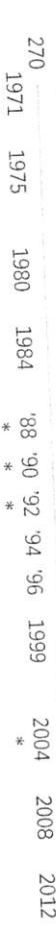


READING SCORES, 17-YEAR-OLDS

300

290

280



* Statistically significant ($p < 0.05$) compared to 2012.

NOTE: NAEP scores range from 0 to 500.

SOURCE: National Assessment of Educational Progress, Long-Term Trend Assessments 2012.

https://www.nationsreportcard.gov/lt_2012/ (accessed July 10, 2019).

growth.³ While there were some disagreements about how to do this analysis and how to interpret the results, virtually all studies emphasized the school attainment of nations.

Each of these efforts, however, was subject to criticism for leaving out consideration of the skills and human capital produced outside of schools, such as within the family, and for ignoring any consideration of school

quality. These criticisms have proven to be well-founded, and responding to them leads to very different policy perspectives.

As more detailed data have become available, the importance of school quality has become undeniable. Specifically, at the individual level, differences in cognitive skills as measured by standardized math and reading tests have been shown to be closely linked to future labor market success.⁴ Moreover, the U.S. has very high returns on cognitive skills—larger than almost all other developed countries.

Additionally, differences in long-run economic growth of nations is closely linked to test scores.⁵ In other words, economic growth is tightly tied to the skills of a country's population, and the available international tests, such as the Programme for International Student Assessment (PISA), do a good job at measuring these important labor force skills.

Turning the policy focus to achievement and skills dramatically alters the necessary policy discussion.

Achievement of U.S. Students

Good measures exist of how U.S. students have been doing over time. Starting in the early 1970s, student performance was assessed in various subjects and at various ages and grades through the National Assessment of Educational Progress (NAEP). Chart 1 plots student achievement from initial testing through 2012 for 17-year-olds.

While there is some small movement up and down over time, the remarkable aspect is that reading and math performance in 2012 looks virtually unchanged from four decades before. Over this time, it is true that the performance of nine-year-olds and of 13-year-olds has improved, but improvements at earlier ages simply have not carried through to the time when students leave school for college and work.

This performance would not be a large problem if students were doing extraordinarily well throughout this period. Unfortunately, that is not the case. There are external benchmarks provided by international testing. The PISA results place the U.S. below the Organization for Economic Cooperation and Development average in math for 2015—just beating out Greece and falling below Italy and Spain.⁶

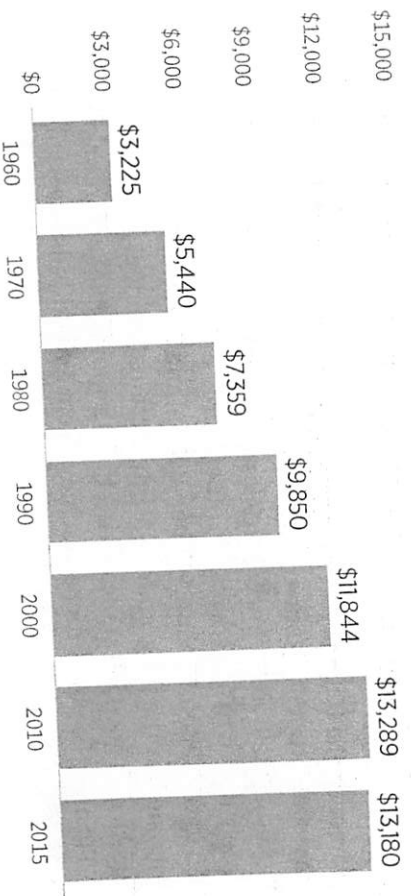
As indicated, PISA scores are a good index of the labor market skills that factor into determining long-run economic growth. These scores do not bode well for the future economic well-being of the nation, or for U.S. economic standing relative to the rest of the world.

The U.S. might not at first appear to be in such serious trouble. The U.S. economy has grown well during the past century, even though

CHART 2

Student Spending Has Quadrupled Since 1960

EXPENDITURES PER AVERAGE DAILY ATTENDANCE, IN REAL 2018 DOLLARS



SOURCES: Author's calculations based on data from National Center for Education Statistics, *Digest of Education Statistics*, 2017, Table 236.70, https://nces.ed.gov/ipeds/data/digest/d17_236.70.asp (accessed July 12, 2019), and National Center for Education Statistics, *Digest of Education Statistics*, 2005, Table 167, https://nces.ed.gov/ipeds/data/digest/d05_167.asp (accessed July 12, 2019).

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achievement on international tests has never been good relative to other developed countries.

Past economic performance of the U.S. likely reflects good economic institutions, generally limited governmental intrusion on the economy, high levels of school completion, and the ability to attract highly educated immigrants. But these relative advantages over other countries are disappearing, and the U.S. will—like other countries—have to rely on the quality of its labor force.

Investments in Human Capital

Given the importance of human capital, and given the lagging performance of U.S. schools, should the U.S. not increase investments in schools? The answer is: yes—but not in the way it has been done.

The U.S. has steadily increased spending over the past half-century, with the exception of a small decline in real spending around the 2008

recession. As shown in Chart 2, spending per pupil adjusted for inflation increased more than fourfold between 1960 and 2015. (In Chart 1, student outcomes are essentially flat over this period.)

The picture of the disconnection between spending and student outcomes is easy to see by looking across states. Chart 3 shows that state increases in spending per pupil in recent decades are unmatched by student performance gains.

This productivity decline is remarkable, particularly when compared with the dynamic improvements in productivity elsewhere in the U.S. economy. Schooling outcomes are the same in 2015 as they were four decades before, even though school funding is now several times as high.

Of course, schools are not the only influence on cognitive skills. Since the 1966 Coleman Report,⁷ which found that, among other factors, a student's family environment influenced academic achievement more than school quality, the influence of families has been widely recognized. The increased spending on schools might have been necessary to compensate for less education in the home. However, it appears that families are at least providing the same educational inputs, and more likely are better now than in the past. While there are more single-parent families (which would signal lower family inputs), there are also better-educated parents and smaller families (which would signal greater family inputs).⁸

In short, the policies of the past have not been leading to significant improvement in schools, and—while it is important that the U.S. improve its schools—simply providing more funding that is used in the ways of the past is unlikely to be successful.

Conclusion

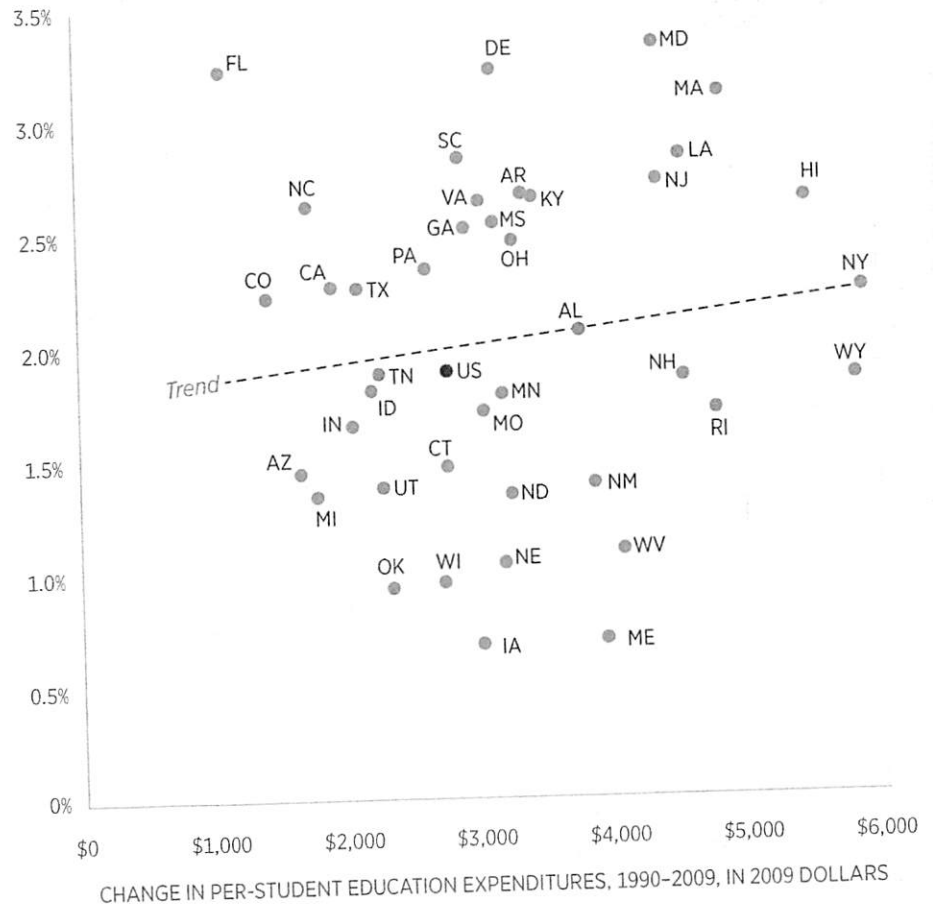
Over the past century, America has led the world in developing the education of its population. The U.S. move to provide universal public education combined with high levels of compulsory schooling led to higher educational attainment in the U.S. than in all other countries for much of the last century. But other countries now have reached the same levels of school attainment, and have done so at much higher levels of quality.⁹ The myopic view that the United States remains the world leader in education, while no longer tenable, has stopped the U.S. from looking deeper into how resources can be used more productively. It is time for the U.S. to do so.

CHART 3

Does More Student Spending Increase Test Scores?

The chart below shows state-by-state data on gains in test scores against increments in education spending. As the data show, there is little support for claims that more education spending yields higher test scores.

CHANGE IN NAEP TEST SCORES, 1992-2011*



* Change as a percentage of standard deviation.

SOURCE: Author's calculations based on National Assessment of Educational Progress and *Digest of Education Statistics*. See also Eric A. Hanushek, Paul E. Peterson, and Ludger Woessmann, *Endangering Prosperity: A Global View of the American School* (Washington, DC: Brookings Institution, 2013), p. 97.

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Endnotes

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8. Eric A. Hanushek, Paul E. Peterson, Laura M. Talpey, and Ludger Woessmann, "The Unwavering SES Achievement Gap: Trends in U.S. Student Performance," NBER Working Paper No. 25648, March 2019, <https://www.nber.org/papers/w25648> (accessed July 29, 2019).
9. Eric A. Hanushek, Paul E. Peterson, and Ludger Woessmann, *Endangering Prosperity: A Global View of the American School* (Washington, DC: Brookings Institution Press, 2013).