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What Can PISA Tell Us about U.S. Education Policy?

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Despite years of attention to “reform” in the United States, overall achievement on international assessments such as PISA has not improved during the period from 2000 to 2012. Reforms focused on high-stakes testing attached to sanctions, expansions of charter schools, and a market-based approach to teaching have been unsuccessful in changing outcomes. Meanwhile, growing childhood poverty, along with increasing segregation, income inequality, and disparities in school spending, have expanded the opportunity gap. Lessons from other nations and successful states indicate that systematic government investments in high-need schools along with capacity-building that improves the knowledge and skills of educators and the quality of curriculum opportunities are more effective ways of improving overall learning and reducing the achievement gap.

U.S. policymakers have been trumpeting the need for educational reform for more than three decades, during which there has been no shortage of handwringing or high-blown rhetoric. In 1983, *A Nation at Risk* decried a “rising tide of mediocrity” in education and called for sweeping reforms. In 1989, President George H. W. Bush and the fifty governors announced a set of national goals that included ranking first in the world in mathematics and science by 2000. But goals are not enough, and the policies that would have been needed to make good on these goals were not forthcoming. In 2000, the United States ranked eighteenth out of thirty-two OECD countries on the Programme for International Student Assessment (PISA) in mathematics and fourteenth in science, below the OECD average in both cases.¹

In 2001, the U.S. Congress passed No Child Left Behind (NCLB), a massive bill that sought to drive achievement and close achievement gaps by setting test score targets for individual groups of students each year, increasing them annually, and creating sanctions for schools that do not meet them. Among the sanctions for “failing” schools are redirection of portions of their funding to private providers, options for students to transfer to other schools, reconstitution (replacing staff), a range of programmatic interventions, replacement by charter schools, and school closure. Alongside this highly intrusive federal role in reform have been several other policy streams that were consistently pursued and intensified over more than a decade. These include federal funding and incentives for expanding charter schools, reducing teaching preparation through alternative routes to teacher preparation, and tying test scores to teacher evaluation and personnel decisions, as well as to decisions about student promotion and graduation.

The theory of action underlying these reforms has been largely market-based and focused on extrinsic incentives. The primary problem has been defined as lack of motivation. The presumed solution then has been that educators and schools will be motivated to improve through competition (between and among schools as well as teachers), accompanied by rewards

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and punishments. After more than a decade of these policies, PISA results suggest that there has been no improvement in overall national performance. In 2012, the United States remained even farther away from those heady aspirations of a quarter-century earlier, having dropped farther behind other nations on both raw scores and rankings than it had been in 2000. By 2012, the United States was ranked thirty-second in mathematics, well below the average of the now larger number of participating nations, and twenty-third in science. U.S. scores and rankings had also dropped in reading during that time (from about fourteenth to twenty-first among participating countries).

One would have to conclude that, despite their aggressive pursuit, the policies that have guided the United States over the past twelve years have not succeeded in improving overall national outcomes. Indeed, if one puts stock in the PISA results, the score declines in each testing area would suggest that U.S. policies are propelling the nation backward rather than forward in terms of educational progress.

What Can PISA Tell Us?

With each administration of PISA, issues are raised about what such a test can tell policymakers in any country, since it tests only certain kinds of content in particular ways that may not map onto a nation's curriculum, since nations are very different from one another in social composition, and since there are sampling issues with each administration that could influence the overall results. These are legitimate concerns, to be sure, and they suggest that one should consider the content PISA assesses and the social composition of national samples in interpreting the meaning of the results.

Nonetheless, particularly in the United States, where state and local test results have been so distorted by high-stakes policies, it is important to have a barometer that stands beyond these measures. Indeed, as more and more high-stakes decisions have been linked to state test scores under the requirements of NCLB, these scores have climbed dramatically in every state. At the same time, scores on the National Assessment of Educational Progress have been substantially flat in reading and writing and have climbed only at the lower grade levels in mathematics.

How could there be such discrepancies in the pictures provided by state, national, and international assessments? First, a substantial amount of research over the past decade has documented that, under NCLB, teachers have felt compelled to teach to the test and, indeed, to teach the test itself, narrowing the curriculum until it often matches the content and format of the tests.² The kind of learning students do under these circumstances often does not generalize to other contexts or situations. In addition, studies have documented how many of the most vulnerable students have been removed from the testing population in order to boost average scores, often by excluding struggling students from school altogether, thus creating the appearance of gains without the reality.³

Finally, the kind of content assessed on state tests is significantly different from that evaluated on assessments like PISA. PISA uses primarily open-ended items to examine how students can apply their knowledge to new situations, asking them to reason and explain their thinking. But state tests in the United States evaluate primarily lower-level skills, such as recall, recognition, and the application of procedures. When NCLB tripled the frequency of required tests, many states decided they could not afford to maintain open-ended items requiring human scoring and eliminated the portions of their testing programs asking students to solve complex problems or explain their thinking. As a result, a recent RAND Corporation study found that fewer than 2 percent of mathematics items and only about 20 percent of English language arts

items on state tests ask students to analyze, synthesize, compare, critique, investigate, prove, or explain their ideas—the kinds of higher-order skills the modern economy demands and other nations’ assessments increasingly stress.⁴ Thus PISA provides insights about whether these skills are developing alongside the basic skills that are the focus of U.S. testing.

Finally, cognizant that the social composition of a nation’s sample influences the results, we can look “under the hood” of the PISA results to understand how different populations of students are performing and how broad-scale trends in populations and school practices may affect the findings. In the United States, one of the most vivid lessons emerging from such analyses is the strong effect social class has on student results—and the ways in which U.S. policy regarding the funding and support of schools intersects with students’ economic, racial, and ethnic backgrounds.

Inequality and Educational Outcomes

The often-hidden story about U.S. achievement rankings is the large disparity that is a function of growing inequality—specifically the very different performance of high-income and low-income children, of whites and Asians in comparison with African Americans and Latinos, and those in low-poverty schools in comparison with those in high-poverty schools. In fact, whites and Asians in the United States typically score above the OECD average in math, reading, science, and problem solving on the PISA,⁵ while African American and Latino students score well below.

A 2009 analysis showed that U.S. students in low-poverty schools actually scored at the very top of the international rankings in reading, while those in schools of concentrated poverty were near the bottom, neck and neck with students in Chile and Mexico.⁶ (See Figure 1.) Indeed, U.S. schools with fewer than 10 percent of students in poverty rated first in the world in reading, and those with as many as 25 percent of students in poverty still rated third—right behind South Korea and Finland. Given that, in the developed countries, far fewer than 10 percent of students live in poverty, U.S. schools and teachers were doing remarkably well under more challenging circumstances. Similar patterns are also found in mathematics and science, though overall achievement in mathematics is lower in the United States—a function of teacher recruitment, training, and curriculum policies I address later.

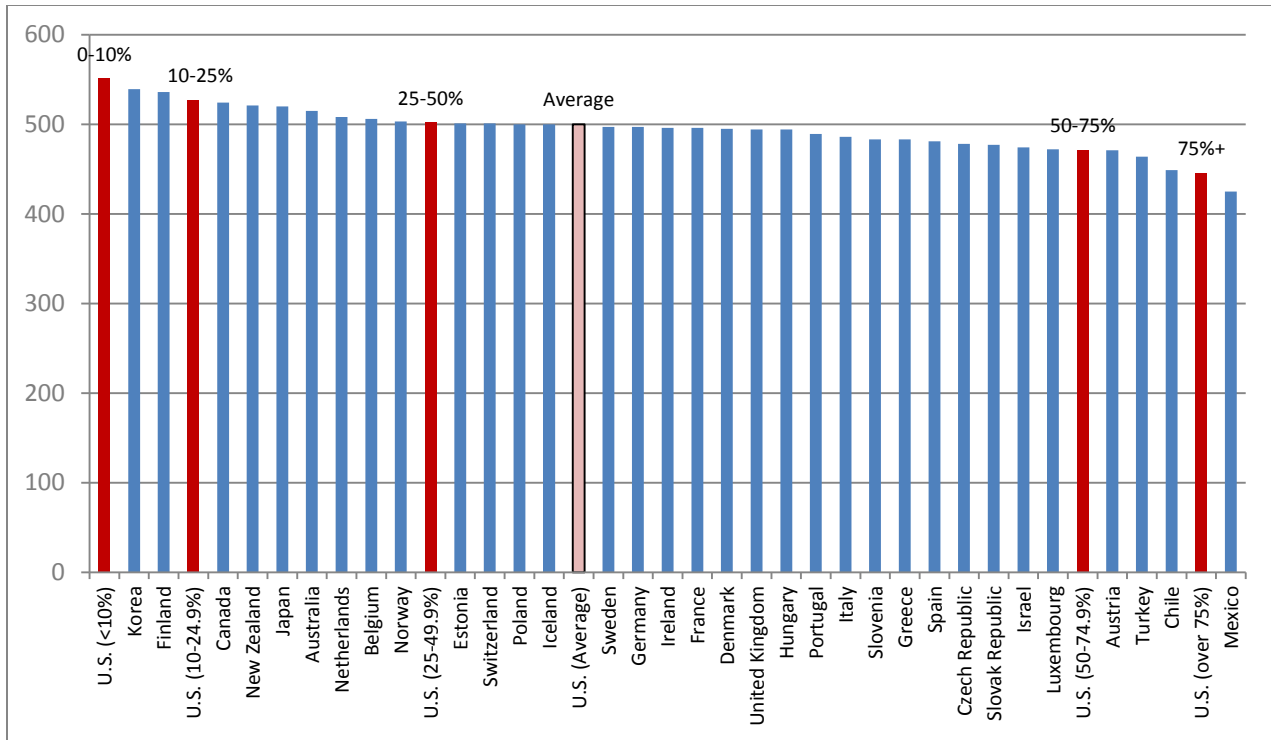


Figure 1. Scores on PISA reading assessments, 2009, by country and poverty rates in U.S. schools. (Data generated using PISA International Data Explorer, available at <http://nces.ed.gov/surveys/pisa/idepisa>.)

Five factors create the major building blocks of unequal and inadequate educational outcomes in the United States:

- The high level of poverty and the low levels of social supports for low-income children’s health and welfare, including their early learning opportunities
- The unequal allocation of school resources, which is made politically easier by the increasing resegregation of schools
- Inadequate systems for providing high-quality teachers and teaching to all children in all communities
- Rationing of high-quality curriculum through tracking and interschool disparities
- Factory model school designs that have created dysfunctional learning environments for students and unsupportive settings for strong teaching

Poverty and Unequal Resources

The root of inequity in educational outcomes in the United States is growing poverty and resegregation. U.S. childhood poverty rates have grown by more than 60 percent since the 1970s and are now by far the highest among OECD nations, reaching 22 percent in the last published statistics.⁷ (See Figure 2.) The disparity is even greater when poverty rates are calculated after government transfers that support housing, health care, food, child care assistance, and other essentials. These transfers bring most OECD nations’ childhood poverty rates down to well under 10 percent, but, because our safety net for families is so tattered, the recalculation hardly changes the U.S. rate.⁸ U.S. children living in poverty have a much weaker safety net than their

peers in other industrialized countries, where universal health care, housing subsidies, and high-quality universally available childcare are the norm.

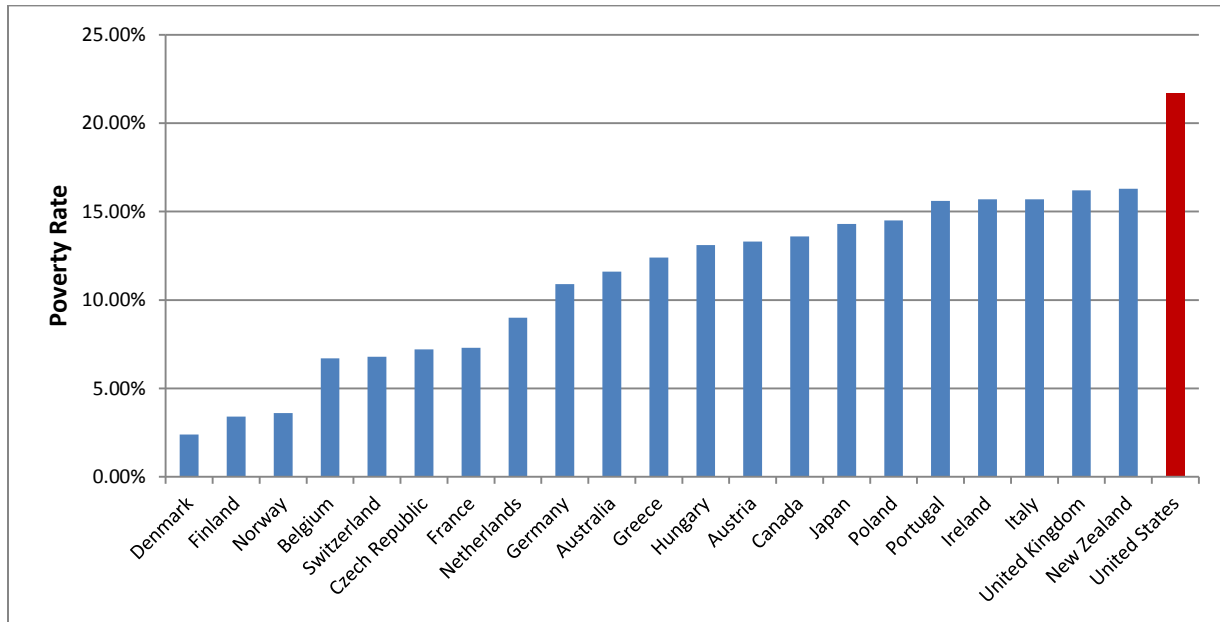


Figure 2. Childhood poverty rates in PISA countries (before government transfers)

In addition to the direct effects of poverty on children's home resources, low-income children are much less likely to have access to early learning opportunities in the United States than their more affluent peers. As a result, an estimated 30 to 40 percent of children enter kindergarten without the social and emotional skills and language experiences needed to be initially successful in school.⁹ Studies have found that the size of the working vocabulary of four-year-old children from low-income families is approximately one-third that of children from middle-income families, which makes it much more difficult for them to read with comprehension or to engage in academic learning relying on that vocabulary, even when they can decode text. By first grade, only half as many first-graders from poor families are proficient at understanding words in context and engaging in basic mathematics as first-graders from nonpoor families.¹⁰

Although there is significant evidence that high-quality preschool programs offset these disparities and improve school achievement and attainment, with estimated returns of about four to ten dollars for every dollar invested,¹¹ only a few states have committed to high-quality universally available preschool for all students. Thus, the achievement gap that is already present at the start of kindergarten has not been addressed in most communities.

Beyond the large and growing inequalities that exist among families and communities, profound inequalities in resource allocations to schools have been reinforced by the increasing resegregation of schools over the decades of the 1980s and 1990s. During that twenty-year span, desegregation policies and funding assistance were largely abandoned by the federal government and the courts, and state governments generally followed suit.¹²

As a consequence, the gains in desegregation made in the 1960s and 1970s were substantially rolled back. By 2000, 72 percent of the nation's black students attended predominantly minority schools, up significantly from the low point of 63 percent in 1980. The proportion of students of color in intensely segregated schools also increased. Nearly 40 percent

of African American and Latino students attend schools with a minority enrollment of 90 to 100 percent.¹³

These intensely segregated schools serving concentrations of children in poverty are also located in districts that less well-resourced than those serving more advantaged students. Recent analyses of data prepared for school equity cases in more than twenty states have found that on every tangible measure—from qualified teachers and reasonable class sizes to adequate textbooks, computers, facilities, and curriculum offerings—schools serving large numbers of students of color have significantly fewer resources than schools serving more affluent, white students.¹⁴ Many such schools are so severely overcrowded that they run a multitrack schedule with a shortened school day and school year, they lack basic textbooks and materials, and they do not offer the courses students would need to be eligible for college. Also, they are staffed by a parade of untrained, inexperienced, and temporary teachers.¹⁵

These inequities are in part a function of how public education is funded in the United States. In most cases, education costs are supported primarily by local property taxes, along with state grants-in-aid that are somewhat equalizing but typically not sufficient to close the gaps caused by differences in local property values. In most states, the wealthiest districts spend at least three times what the poorest districts can spend per pupil, differentials that translate into dramatically different salaries for educators, as well as different learning conditions for students.¹⁶ Furthermore, the wealthiest states spend about three times what the poorer states spend.¹⁷ So the advantages available to children in the wealthiest communities of high-spending and high-achieving states, such as Massachusetts, Connecticut, Vermont, and New Jersey, are dramatically different from the schooling experiences of those in the poorest communities of low-spending states, such as California, Mississippi, Alabama, and Louisiana, where buildings are often crumbling, classes are overcrowded, instructional materials are often absent, and staff are often transient.

Although many U.S. educators and civil rights advocates have fought for higher-quality and more equitable education over many years—in battles for desegregation, school finance reform, and equitable treatment of students within schools—progress has been stymied in many states over the past two decades as segregation has worsened and disparities have grown. While students in the highest-achieving states and districts in the United States do as well as their peers in high-achieving nations, our continuing comfort with profound inequality is the Achilles' heel of U.S. education.

Unequal Distribution of Curriculum and Teachers

These inequalities translate into disparities in the number and quality of teachers and other educators available to students, and to unequal access to high-quality curriculum.

In a case brought to challenge school desegregation efforts in Jefferson County, Kentucky, and Seattle, Washington, more than 550 scholars signed onto a social science report filed as an amicus brief, which summarized an extensive body of research showing the persisting inequalities of segregated minority schools.¹⁸ The scholars concluded:

More often than not, segregated minority schools offer profoundly unequal educational opportunities. This inequality is manifested in many ways, including fewer qualified, experienced teachers, greater instability caused by rapid turnover of faculty, fewer educational resources, and limited exposure to peers who can positively influence academic learning. No doubt as a result of these disparities, measures of educational outcomes, such as scores on standardized achievement

tests and high school graduation rates, are lower in schools with high percentages of nonwhite students.¹⁹

As segregation and school funding disparities grew worse throughout the 1980s and 1990s, the practice of lowering or waiving credentialing standards to fill classrooms in high-minority, low-income schools—a practice that is unheard of in high-achieving nations and in other professions—became commonplace in many U.S. states, especially those with large minority and immigrant populations, such as California, Texas, Florida, and New York.

In many states where school-funding litigation has been brought, plaintiffs have documented the fact that teachers in high-need schools have, on average, lower levels of experience and education, are less likely to be credentialed for the field they teach, and have lower scores on certification tests and other measures of academic achievement. Furthermore, a growing body of research has shown that these kinds of qualifications matter for student achievement. Studies at the state, district, school, and individual student levels have found that teachers' academic background, preparation for teaching, certification status, and experience significantly affect their students' learning gains.²⁰

In combination, teachers' qualifications can have substantial effects. For example, a large-scale study of high school student achievement in North Carolina found that students' achievement growth was significantly higher if they were taught by a teacher with the following: certification in his or her teaching field, full preparation upon entry (i.e., did not enter through the state's alternative or "lateral entry" route), high scores on the teacher licensing test, a diploma from a competitive college, two or more years of teaching experience, or National Board certification.²¹ Taken individually, each of these qualifications was associated with greater teacher effectiveness. Moreover, the researchers found that the combined influence on achievement growth of having a teacher with most of these qualifications compared with having a teacher with few of them was larger than the effects of race and parent education combined, or the average difference in achievement between a typical white student with college-educated parents and a typical black student with high-school-educated parents. While achievement from one year to the next is still largely dependent on prior achievement, this finding suggests that the achievement gap might be reduced if minority students were more routinely assigned highly qualified teachers, rather than the poorly qualified teachers they most often encounter.

These findings appear to extend around the world. One team of researchers, for example, found that the most significant predictors of mathematics achievement across forty-six nations included teachers' having certification, a college major in mathematics or mathematics education, and at least three years of teaching experience.²² These same variables—reflecting what teachers have learned about content and how to teach it to a range of learners—show up in study after study as predictors of teachers' effectiveness. This study also found that, although the national level of teacher quality in the United States is similar to the international average, the opportunity gap in students' access to qualified teachers between students of high and low socioeconomic status is among the largest in the world.

These disparities, which have come to appear inevitable in the United States, are not the norm in developed nations around the world, which typically fund their education systems centrally and equally, with additional resources often going to the schools where students' needs are greater. These more equitable investments made by high-achieving nations are also steadier and more focused on critical elements of the system: the quality of teachers and teaching, the development of curriculum and assessments that encourage ambitious learning by students and teachers, and the design of schools as learning organizations that support continuous reflection

and improvement. With the exception of a few states with enlightened long-term leadership, the United States, by contrast, has failed to maintain focused investments on these essential elements.

Learning from Ourselves and Others

In the United States, the dominant discourse, since the early 1980s, has alleged that “money doesn’t make a difference.” Yet the evidence indicates that money, properly allocated for the right educational resources for students who need them the most, makes a substantial difference in educational and life outcomes. PISA analyses from 2012 demonstrate that there is a strong relationship between nation’s levels of achievement and the extent to which they invest greater educational resources in schools serving socioeconomically disadvantaged students.²³ (See Figure 3.) In addition to those traditional high-achievers with equitable resource allocation systems, such as Finland and Korea, new arrivals to the top tier of high-performers—such as Estonia, Latvia, and Vietnam—have accomplished their recent progress in substantial part because they have reallocated resources to produce greater equity in educational opportunity. The United States lags far behind on equity in resource allocation.



Figure 3. Association between equity in resource allocation and student achievement

Studies in individual states, such as Connecticut, Massachusetts, New Jersey, and North Carolina, suggest that when they have reallocated resources to better address the needs of disadvantaged students in underresourced schools, achievement has increased substantially.²⁴

A recent study, which looked at the outcomes in twenty-eight states that engaged in school finance reform since 1971, found that in districts that substantially increased their spending as the result of court-ordered changes in school funding, low-income children were significantly more likely to graduate from high school, earn livable wages, and avoid poverty in adulthood.²⁵ For low-income students who spent all twelve years of school in districts that increased spending by 20 percent, graduation rates rose by 23 percentage points and they attained nearly a full year of additional education after high school. Between the ages of 25 and 45, these same children were 20 percentage points less likely to fall into poverty during any given year. Their individual wages were 25 percent higher than they would have been without the changes and their family incomes were 52 percent higher. The effects were large enough to eliminate between two-thirds and the entire gap in adult outcomes between those raised in poor families and those raised in nonpoor families.

These striking findings must make one wonder what we might accomplish as a nation if we could finally set aside what appears to be our de facto commitment to inequality, so profoundly at odds with our rhetoric of equity, and put the millions of dollars spent continually arguing and litigating into building a high-quality education system for all children. To imagine how that might be done, one can look at nations that started with very little and purposefully built highly productive and equitable systems, sometimes almost from scratch, in the space of only two to three decades.

Consider two very different nations—Finland and Singapore—that built strong education systems, nearly from the ground up. Neither of these nations was succeeding educationally in the 1970s, when the United States was the unquestioned education leader in the world. Both created productive teaching and learning systems by expanding access while investing in ambitious educational goals using strategic approaches to build teaching capacity.

Equitable Access to High-Quality Schools and Teaching

I use the term “teaching and learning system” advisedly to describe a set of elements that, when well designed and connected, reliably support all students in their learning. These elements ensure that students routinely encounter well-prepared teachers who work in concert around thoughtful, high-quality curriculum, supported by appropriate materials and assessments. These elements also help students, teachers, leaders, and the system as a whole continue to learn and improve. While neither of these countries lacks problems and challenges, each has created a much more consistently high-quality education system for all of its students than has the United States. And while no system from afar can be transported wholesale into another context, there is much to learn from the experiences of those who have addressed problems we encounter. A sage person once noted that, though it is useful to learn from one’s own mistakes and experiences, it is even wiser to learn from those of others.

Although Finland and Singapore are very different from one another culturally and historically, both have made startling improvements in their education systems over the past thirty years. Their investments have catapulted them to the top of international rankings in student achievement and attainment, graduating more than 90 percent of their young people from high school and sending large majorities through college, far more than in the much wealthier

United States. Their strategies also have much in common. Both countries do or have done the following:

- *Fund schools adequately and equitably* and add incentives for teaching in high-need schools. Both countries have built their education systems on a strong egalitarian ethos, explicitly confronting and addressing potential sources of inequality. In Finland, this policy begins with a strong emphasis on universal access to high-quality child care and early education and a strong developmental commitment to the welfare of each child in terms of health, education, and care. In Singapore, educators who want to climb the career ladder are expected to demonstrate their commitment and competence in schools with higher-need students, which are often supported with additional funding to take on particular teaching and learning challenges.

- *Organize teaching around national standards and a core curriculum* that focus on higher-order thinking, inquiry, and problem solving through rigorous academic content. Working from lean national curriculum guides that have recommended assessment criteria, teachers collaborate to develop curriculum units and lessons at the school level and develop school-based performance assessments—which include research projects, science investigations, and technology applications—to evaluate student learning. In Singapore, these elements are increasingly part of the examination system. In Finland, the assessments are classroom-based but are guided by the national curriculum, which emphasizes students’ abilities to reflect on, evaluate, and manage their own learning.

Unlike in the United States, narrowing the curriculum has not been an issue. Finland and Singapore both devote the large majority of instructional time in every grade to a liberal arts curriculum that includes social studies, science, physical education, music, fine arts, moral or religious education, foreign language (English), practical arts, and a range of extracurricular activities and electives.

- *Eliminated examination systems that had once tracked students* into different elementary and middle schools and restricted access to high school. Since adopting national curriculum guidelines, these nations have been committed to helping all students master the same essential skills and content until the beginning of high school—not to devising watered-down versions for some students.

- *Use assessments that require in-depth knowledge of content and higher-order skills.* Both countries have matriculation exams for admission to college. These are the only external examinations in Finland. In Singapore, examinations are given in the sixth and ninth grades as well as at the end of high school. These exams have open-ended questions that require deep content knowledge, critical analysis, and writing. Although the matriculation exams are not used to determine high school graduation, they are taken by nearly all students and they set a high bar for high school coursework.

In Finland, where there are no external standardized tests used to rank students or schools, most teacher feedback to students is in narrative form, emphasizing descriptions of their learning progress and areas for growth.²⁶ Finland uses a centrally developed assessment, like the National Assessment of Educational Progress used in the United States, which is given to samples of students at the end of the second and ninth grades to inform curriculum and school investments. The focus of these open-ended assessments is to provide information to support learning and problem solving, not to allocate sanctions and punishments.

- *Invest in strong teacher education* programs that recruit top students, completely subsidize their extensive training programs, and pay recruits a stipend while they learn to teach. Both nations overhauled teacher education programs to increase teachers’ pedagogical

knowledge and skills and ensure that they have a deep mastery of the content areas they will teach. Finnish teachers' preparation includes at least a full year of clinical experience in a model school associated with a university. Within these model schools, student teachers participate in problem-solving groups, a common feature in Finnish schools. All teachers are trained in research methods so that they can "contribute to an increase of the problem solving capacity of the education system."²⁷

- *Pay salaries that are equitable* across schools and competitive with other careers, generally comparable to those of engineers. Teachers are viewed as professionally prepared and are well respected. Working conditions are supportive and include substantial participation in decision making about curriculum, instruction, assessment, and professional development.

- *Support ongoing teacher learning* by ensuring mentoring for beginning teachers and providing fifteen to twenty-five hours a week for all teachers to plan collaboratively and engage in analyses of student learning, lesson study, action research, and observations of one another's classrooms, which help them continually improve their practice. Both nations have incentives for teachers to engage in research on practice and both fund ongoing professional development opportunities in collaboration with universities and other schools.

- *Pursue consistent, long-term reforms* by setting goals for expanding, equalizing, and improving the education system and by steadily implementing these goals, making thoughtful investments in a high-quality educator workforce and in school curriculum and teaching resources that build the underpinnings for success. This undertaking has been made possible in part by the fact that these systems are managed by professional ministries of education, which are substantially buffered from shifting political winds. Frequent evaluations of schools and the system as a whole have helped guide reforms. In each nation, persistence and commitment to core values have paid off handsomely, as both are ranked in the very top tier of countries on international assessments and have among the most equitable outcomes in the world.

Both nations have undertaken these elements in a systemic fashion, rather than pouring energy into a potpourri of innovations and then changing course every few years as many communities in the United States have done, especially large cities. And while these two small nations—each comparable in size to a midsize U.S. state—have conducted this work from a national level, similar strategies have been successfully employed at the state or provincial level in high-scoring Australia, Canada, and New Zealand, and regions such as Hong Kong and Macao in China. They demonstrate how it is possible to build a system in which students are routinely taught by well-prepared teachers who are given time to collaboratively reflect on and refine the curriculum, supported by appropriate materials and assessments that foster learning for students, teachers, and schools alike.

Equitable Access to a Strong Curriculum

In the United States, enormous energy is devoted to discussions of the achievement gap. Much less attention, however, is paid to the opportunity gap—the accumulated differences in access to key educational resources that support learning at home and at school. These key resources include high-quality curriculum, good educational materials, expert teachers, personalized attention, and plentiful information resources.

In contrast, nations around the world are transforming their school systems to eliminate opportunity gaps; they are expanding educational access to more and more of their people, and they are revising curriculum, instruction, and assessment to meet the demands of the knowledge economy. Today, there is very little curriculum differentiation until high school in the education

offerings for students in high-achieving jurisdictions, such as Finland, Hong Kong, Singapore, and South Korea, which have sought, as part of their reforms, to equalize access to a common, intellectually ambitious curriculum. In the last two years of high school, there is often differentiation of program and courses by interest, aptitude, and aspirations, but all courses of study offer high-quality options for later education and careers. By comparison, countries that have continued their tradition of sorting students much earlier are, like the United States, lagging in international assessments.

This finding is not surprising, as a substantial body of research over the past forty years has found that (1) the combination of teacher and curriculum quality explains most of a school's contribution to achievement, and (2) access to a rich curriculum is a more powerful determinant of achievement than initial achievement levels. That is, when students of similar backgrounds and initial achievement levels are exposed to more or less challenging curriculum material, those given the richer curriculum ultimately outperform those given the less challenging curriculum.²⁸

These efforts to reduce tracking have been supported by social policies that reduce childhood poverty and allow students to start school on a level playing field, and that give their teachers much better training and much more noninstructional time to plan and collaborate. In addition, as all children are exposed to similar high-quality lessons, the variance in their knowledge and skills decreases. Ensuring access to a more common curriculum supports greater equity and ultimately makes teaching all students easier.

Finland provides an excellent example. Although there was a sizable achievement gap among students in the 1970s, strongly correlated to socioeconomic status, this gap has been progressively reduced as a result of curriculum reforms starting in the 1980s—and it has continued to grow smaller and smaller in the 2000, 2003, and 2006 PISA assessments. By 2006, Finland's between-school variance on the PISA science scale was only 5 percent, whereas the average between-school variance in other OECD nations was about 33 percent.²⁹ This small variability is true even in schools in Helsinki that receive large numbers of previously less well-educated immigrants from Africa and the Middle East. (Large between-school variation is generally related to social inequality, including both the differences in achievement across neighborhoods differentiated by wealth, and the extent to which schools are funded and organized to reduce or expand inequalities.)

Today's expectation that schools will enable all students, rather than a small minority, to learn challenging skills to high levels creates an entirely new mission for schools. Rather than merely "covering the curriculum" or "getting through the book," this new mission requires that schools substantially enrich the intellectual opportunities they offer while meeting the diverse needs of students. This demands not only more skillful teaching but also a coherent curriculum that engages students in learning essential concepts in ways that develop strong thinking skills.

If the United States really wants to close the achievement gap among its children, it must address the yawning opportunity gap. Because of the critical importance of education for individual and societal success in the flat world we now inhabit, the United States can no longer afford to maintain the antiquated tradition of inequality in the provision of education. If "no child left behind" is to be anything more than empty rhetoric, we will need a policy strategy that creates a rich and challenging curriculum for all students and supports it with thoughtful assessments, access to knowledgeable, well-supported teachers, and equal access to school resources.

Notes

¹ National Center for Education Statistics (NCES), *The Condition of Education, 2002* (Washington, DC: U.S. Department of Education, 2002).

² See, e.g., Linda Darling-Hammond, *The Flat World and Education: How America's Commitment to Equity Will Determine Our Future* (New York: Teachers College Press, 2010); Stephen P. Klein, Laura S. Hamilton, Daniel F. McCaffrey, and Brian M. Stecher, *What Do Test Scores in Texas Tell Us?* (Santa Monica, CA: RAND Corporation, 2000); Jaekyung Lee, *Tracking Achievement Gaps and Assessing the Impact of NCLB on the Gaps: An In-Depth Look into National and State Reading and Math Outcome Trends* (Cambridge, MA: Civil Rights Project at Harvard University, 2006); T. S. Smyth, "Who Is No Child Left Behind Leaving Behind?" *Clearing House: A Journal of Educational Strategies, Issues and Ideas* 81, no. 3 (2008): 133–37.

³ See, e.g., Julian Vasquez Heilig and Linda Darling-Hammond, "Accountability Texas Style: The Progress and Learning of Urban Minority Students in a High-Stakes Testing Context," *Educational Evaluation and Policy Analysis* 30, no. 2 (June 2008): 75–110, available at <http://epa.sagepub.com/cgi/reprint/30/2/75>.

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