

The Importance of Infrastructure Development to High-Quality Literacy Instruction

David K. Cohen and Monica P. Bhatt

Summary

Although the education community has identified numerous effective interventions for improving the literacy of U.S. schoolchildren, little headway has been made in raising literacy capabilities. David K. Cohen and Monica P. Bhatt, of the University of Michigan, contend that a major obstacle is the organizational structure of the U.S. education system. Three features in particular—the lack of educational infrastructure, a decentralized governance system, and the organization of teaching as an occupation—stymie efforts to improve literacy instruction.

The authors emphasize that the education system in the United States has always been a patchwork of local school systems that share no common curricula, student examinations, teacher education, or means of observing and improving instruction. Although localities have broad powers over education, few have built the capability to judge or support quality in educational programs. The quality criteria that have developed chiefly concern teachers, not teaching. The decentralization and weak governance of U.S. schooling also deprives teachers of opportunities to build the occupational knowledge and skill that can inform standards for the quality of work, in this case instruction. And, unlike practitioners in other professions teachers have little opportunity to try to strengthen teaching quality by setting standards for entry to the occupation.

Cohen and Bhatt review six types of organizational reforms undertaken over the past several decades to improve literacy and other academic outcomes for U.S. students. After briefly describing accountability, comprehensive school reforms, knowledge diffusion, improvement of human capital, and market-based reforms, the authors turn to the Common Core State Standards, an effort initiated by state governors and school leaders to raise student achievement. The authors conclude that the fundamental question about the Common Core, as with the other reforms they discuss, is whether educators and policy makers can mobilize the capability to help states and localities invent, adapt, and implement reliable ways to improve instruction.

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David K. Cohen is the John Dewey Collegiate Professor of Education, and professor of public policy, at the University of Michigan. Monica P. Bhatt is a graduate student in education policy, also at the University of Michigan.

Ongoing efforts to design and disseminate interventions to improve literacy outcomes for U.S. schoolchildren have been something of a success story, but the nation's schools have been less successful in their implementation and use of these interventions. Despite the availability of best practices, the quality of literacy instruction in the United States is quite variable, and the variations contribute to unequal achievement for students. We attribute this incongruence to the unusual organization of the U.S. education system. In this article we tackle two questions. What organizational characteristics of the education system have hindered the development of consistently strong literacy instructional programs? What changes in school organization could help to develop and sustain consistently high-quality literacy instruction?

Beginning with the first question, we argue that the key organizational features that have shaped the quality of teaching in all subjects, including literacy, are the lack of educational infrastructure, a decentralized governance system, and the organization of teaching as an occupation. Each of these features impedes efforts to improve literacy instruction, yet they are seldom the target of reforms.

To begin to answer the second question we consider several reforms that have recently been at the forefront of organizational change: accountability, comprehensive school reforms, knowledge diffusion, improvement of human capital, market-based reforms, and the development of the Common Core State Standards. We discuss the potential each has to improve literacy instruction as well as its limitations, and we evaluate which might be most likely to improve literacy instruction.

How Organization Influences School Quality

When inspectors visit a construction site to assess the quality of work, they do so against a building code; this code typically is written out in detail and is used to guide work and teach apprentices.¹ When hospital head residents supervise interns as they take patients' histories or check blood pressures, they compare the interns' work with established procedures, many of which are written down and used to guide work and teach novices. In these cases and many others, the quality of workers' performance is measured in light of occupational standards.

That has not been the case for teaching in U.S. public schools. No common standards exist against which teachers' performance can be judged, and thus no inspection of their performance is conducted in light of such standards. There have been standards of a sort, but they have either not focused on performance or not focused on it in sufficient detail to discriminate acceptable from unacceptable work. Yet teaching is by far the largest school influence on learning, so teaching quality is central to academic achievement. To understand the quality of literacy and other academic work in U.S. schools, one must first understand why the United States has no framework—no educational infrastructure—that could inform teaching and teacher education and support valid judgments about the quality of teaching.

Defining Educational Infrastructure

The elements of educational infrastructure include examinations, curricula or curriculum frameworks, teacher education, inspection systems or other means to observe and improve instruction, and a teaching force whose members succeeded in those curricula and exams as students. Some national school systems have all of these elements while

others have different subsets; a few U.S. subsystems have a few of the elements. In some cases the elements are deliberately aligned, while in others they appear to be somewhat independent. Teachers who work with such infrastructure have instruments they can use to set academic tasks that are tied to curriculum and assessment. The framework can help them to define quality in students' work and provide valid evidence of instructional quality. Teachers can develop a common vocabulary to aid them in working together to identify, investigate, discuss, and solve problems of teaching and learning. They thus can develop occupational knowledge and skill that are held in common and communicated within the occupation and over time. Such knowledge and skill can inform standards of quality work in education, as they do in plumbing and electrical work. Individual school systems with such infrastructure also may have the means to influence instruction more broadly.

The mere existence of infrastructure does not ensure excellent or effective education; that depends on how well the infrastructure is designed and used. Design deals with the scope, content, and organization of curricula; the nature of assessments; the organization and content of teacher education; and the links among these elements. The design of infrastructure also influences use, both through the extent to which the instruments are made intelligible and accessible to practitioners and by the existence of agencies and procedures that monitor and improve use. Use can be influenced by the presence or absence of time and procedures for collective work on teaching and learning, by standards for entry to the occupation, by requirements for education and training, and by criteria for promotion; in some national systems, for example, promotion and tenure depend on

the demonstration of competent classroom practice.

Consequences of the Lack of Educational Infrastructure

Such a common infrastructure did not develop in American education. The movement to make education available to all American children was primarily local, both politically and economically, and resulted in thousands of school districts. Decisions about what students would learn and who would teach them were local. The mass enrollment that ensued was, as Claudia Goldin and Lawrence Katz have shown, a remarkable achievement, but the resulting education "system" had little in the way of common framework.²

This lack of a common infrastructure led to the development of several unusual features in U.S. public education. One concerned testing: because there was no common curriculum, a nationwide or even statewide test that assessed the extent of students' mastery of a curriculum was impossible to devise. As a result, American standardized tests at the state and national levels are designed to be primarily independent of particular curricula; furthermore, because these tests are expensive to develop, districts and schools could not afford to devise rigorous standardized tests that were tied to their own curricula.³ Education of teachers was a second anomaly: absent a common curriculum, teachers could not learn how to teach it, let alone how to teach it well. As a result, decades of studies have found that teachers arrive at their first teaching jobs with little or no capability to teach specific subjects. A third anomaly is textbooks. Absent guidance from an established curriculum or, until very recently, curriculum frameworks, publishers had incentives to produce texts that covered anything that might be taught in that subject

To be a good teacher in these circumstances has meant doing something constructive with the students who show up, whether or not they want to be in school and whether or not they want to study.

in that grade, as long as it did not offend local religious or political preferences. As academic knowledge grew, and conceptions of how it might be taught diversified, textbooks thickened, there being no common guidance for an academic diet. Some contain far more content than can be dealt with seriously in a school year. A fourth anomaly is academic standards, which developed in ways that parallel the features of U.S. education discussed here, that is, they are generic rather than based on a common curriculum.

These four anomalies arise from several unique features of U.S. public schools, to which we turn next. One is political: decentralization and weak governance begin to explain why teaching quality has been so persistently modest. The second, the organization of the occupation of teaching, adds to the explanation.

Governance Structures

Local control of schools in the United States is less attributable to ideology than to political and cultural norms in the early and middle nineteenth century. A deep commitment to education in the northern states and a society and economy that were mostly rural and thus quite local combined with a deeply rooted

mistrust of strong government to tie schools to local communities. Although state and federal action helped to enable schooling, school systems developed locally; eligible voters elected school board members and even superintendents in some cases. These officials in turn set or accepted existing policies and procedures for operations, curricula, and personnel—all at the local level. Teachers often “boarded around” with families. Voters exercised their preferences through formal political and informal social means. In these ways schools were held accountable to the communities in which they resided.

What developed was an organization that suited local taste—local districts were the chief operating agencies—but was quite fragmented and tied to local politics. There now are more than 14,000 local educational authorities, each of which makes decisions on a great range of issues from funding to the nature of the educational program to who will be hired to teach. Despite these broad powers, few localities have built the capability to judge or support quality in educational programs. They employ few staffers with expertise in curriculum and fewer still with expertise in instruction or on-the-job teacher education; until very recently, local work on assessment focused on managing standardized testing, not on monitoring or evaluating educational quality.

This does not mean that educational quality went missing, but rather that it was attended to in ways that fit with the politics of education and the exigencies of a large, decentralized nation. The quality criteria that developed were chiefly criteria of teacher quality, not teaching quality, and they were largely independent of teaching performance. The tacit assumption was that teacher quality was a proxy for teaching quality. In

addition, teacher education was not organized nor informed by mapping backward from evidence of good teaching to the teacher education that would be likely to lead to such teaching.⁴ The lack of attention to teaching quality is deeply rooted in U.S. public education, and we discuss efforts to change it later in this article. But first we explore how the past and current organization of the occupation of teaching has influenced teaching quality.

The Organization of Teaching as an Occupation

The organization of government is not the only influence on quality in teaching. The conditions of employment also have a powerful impact, as does the organization of entry to the occupation. These elements influence the quality of teaching by shaping the qualifications of those who teach and the circumstances in which they perform.

The Conditions of Employment

Public school teaching has been a wholly owned subsidiary of the state since public education developed in the United States. The day-to-day conditions of teachers' employment—how they can organize to deal with educational quality, as well as their workload, class size, time for preparation, salary, vacation, whether they have an office or a telephone, when they can use the bathroom, and perhaps most important, who their students are—have been set by government and those who manage government agencies. Mass attendance has meant that most schools are oriented to batch-process many students; compulsory attendance has meant that families can choose schools and teachers chiefly by deciding where to live; management of instruction has meant that few teachers have much choice about who they will teach, save by deciding where to

work. To be a good teacher in these circumstances has meant doing something constructive with the students who show up, whether or not they want to be in school and whether or not they want to study. One consequence of this arrangement has been that many schools did not make high-quality instruction a top priority.

Teachers have received some compensation for these conditions, chief among them job security in tenure and freedom to decide, behind the closed classroom door, what and how to teach. These arrangements have helped to ensure enough staff for an essential public service but have done little to encourage quality. When professions and other occupations were virtually closed to women, schools were able to recruit many academically qualified teachers, but as other professions opened to women, the conditions of teachers' employment have had less appeal, and the academic ability of entering teachers has declined.⁵

Entry to the Occupation

Those long-standing limitations might have been less constraining if the occupation had been able to use licensure and professional education to shape standards of quality and entry to the occupation. If the occupation had had a strong influence on these matters, it might have exercised a fair degree of control over its membership, much as the American Bar Association does for lawyers and similar organizations do for accountants and architects, thus enabling teachers to set and enforce norms of practice and influence teachers' knowledge and skills. It is impossible to know what would have happened had teachers enjoyed such influence, but because they had little control of entry to the occupation, preservice education, or licensure, organized teachers have had no

opportunity to try to strengthen teaching quality by setting standards for entry to the occupation. Unlike practitioners of plumbing, medicine, accounting, and law, teachers have had very little to say about who can become a teacher or what they must know and be able to do in order to teach. As a result, most teachers have been poorly educated, and their knowledge and skills have improved only modestly during their careers. In addition, the absence of opportunities to cultivate quality in teaching has deprived teachers of what might have made it a more skilled occupation.

State education agencies and legislatures regulate entry to the profession and quality. There have been three sorts of requirements: taking college courses in teacher education; having clinical (classroom) preservice experience; and, in forty-eight states, passing a test that claims to assess knowledge of teaching, subjects, and learning. A series of studies has shown these requirements to have very little bearing on teacher effectiveness.⁶ This finding perhaps results in part from the diffuse coursework curricula and sequences that are often undertaken in teacher-preparation programs and from tests that the vast majority of education students pass with flying colors. States have regulated teaching based on characteristics unrelated to classroom performance. States also have responded to local teacher shortages by granting emergency licenses, which permit schools to hire teachers who do not meet even the modest conventional requirements. There is no principled reason that state agencies could not set much more demanding educational requirements for licensing, but local demand for inexpensive teachers, states officials' unwillingness to buck that pressure, and the lack of state policy makers' appetite for stringent oversight of local practices seem to have been more compelling.

The teacher education resulting from such licensing has quite weakly prepared most of those who teach. The curricula of most teacher-education programs have given would-be teachers very little instruction in how to teach, let alone extended opportunities to learn how to teach from expert practitioners. Even less attention has been paid to how schools and teachers could organize to sustain academically demanding work. These features of teacher education are no accident. Few universities have tried to devise high-quality programs, because teacher education has been a low-status enterprise, because most school of education faculty members have tried to distance themselves from teacher education, and because university faculty and managers have not wanted to upset relations with state regulators and local schools or to lose revenue from low-cost teacher-education programs. Organized teachers never responded to this failure of responsibility by mounting a serious campaign for much better teacher education.

Efforts to Improve Instructional Quality

Despite the inertia on the part of school regulators and educators themselves, the United States is alive with several quite different sorts of efforts to upgrade teaching quality. The most prominent are state and federal standards-based reform policies that attempt to improve operations within classrooms and schools by building an exoskeleton of academic standards, tests, and professional accountability around state and local school systems. Less prominent but still significant are several efforts to build the educational infrastructure that has been largely absent from the U.S. mainstream. These system-building endeavors include several comprehensive school reform designs (CSRDs) and a handful of charter networks. In contrast to

efforts that try to shape classroom work from the level of policy, these are efforts to shape classroom work from the level of practice; one can think of them as building from the inside rather than the outside. A third approach seeks to enhance and expand knowledge of effective instructional practices. To date, the chief example of this approach, which is focused on reading, consists of researchers' efforts to delineate the most effective teaching practices, based on studies of learning and teaching, and to disseminate the findings through a variety of more or less conventional channels. The key agent of change in this approach seems to be knowledge, apart from organization at either the policy or practice levels, and the key players include networks of reading researchers, practitioners, and some federal agencies.

A fourth set of approaches consists of efforts to improve the quality of teaching by recruiting more able teachers to work in schools with the most challenging students, by devising more effective ways to educate teachers, or by using evidence of teachers' effectiveness to weed out the least effective. Although these three efforts differ in important ways, they share the notion that human capital is the key point for intervention. A fifth approach is more organizational and focuses on moving key decisions about schooling away from government and toward markets, either by means of tuition vouchers or charter schools. A sixth approach, the Common Core State Standards, on which we focus much of our attention, is the most recent reform initiative that addresses potential development of an educational infrastructure that can produce high-quality literacy education. Although it began as a version of standards-based reform, this approach may prove to be more ambitious than that.

Accountability

In the past several decades, state and federal education policy makers have been part of an unprecedented effort to raise the quality of learning and teaching. These policies have helped to bring attention to weak schools, to mobilize concern about inequality, and to encourage efforts to improve teaching and learning. Studies show that these accountability systems have led to better student performance on low-stakes mathematics tests, that is, tests that are not tied to accountability or funding at the teacher, school, or district level. Scores on the National Assessment of Educational Progress (NAEP) fourth-grade math tests have improved appreciably, but that improvement far predates No Child Left Behind, and the gains seem to have fallen off in the few years following the federal legislation's passage in 2001. NAEP fourth-grade reading scores also have improved, but only slightly, and the eighth-grade NAEP results have been close to flat.⁷ The black-white test score gap remains large.⁸

One reason for that may be the implementation of the accountability systems. For example, the Improving America's Schools Act of 1994, Goals 2000, and the No Child Left Behind Act of 2001 sought to bring coherence to schooling by aligning academic standards, educational processes, and outcomes. Although these policies sought to remedy the chronic incoherence of U.S. public education, they were put into practice in many thousands of autonomous state and local jurisdictions and schools that had long been fragmented and weak, with no agreement on what constituted school improvement.

Fragmented and weak governance shaped implementation. As a result, the rigor of state academic standards, curricula, and tests varies greatly among the states. Many states

have sought to decrease the number of failing schools by setting only modest standards and criteria for proficiency on tests. State tests have often become the basis for a proto-curriculum on which students are drilled in procedural skills; academic achievement in many weak schools has improved little or not at all.⁹

Perhaps a larger problem with the development of these accountability systems is that educators in weak schools may not be able to use the policies effectively without more support than the standards, tests, and accountability offered by the policies. To be effective, teachers need instruments that connect standards and assessments with practice; these instruments include curriculum and teacher know-how to use the curriculum well. That, in turn, requires teacher education as well as a school organization and management focused on improved teaching and learning. Policy makers seemed to assume that state and local educational authorities would have the professional capacity to implement these accountability reforms with fidelity. The poor fit between the policy designs and the organizational sources of weak teaching quality discussed earlier helps explain the weak results of these policies.

Systems of Schooling

If these federal accountability policies fell short in their broad goals, they did help to promote several productive approaches to school improvement. In contrast to the federal “exoskeleton” policies, comprehensive school reform designs and several charter networks center their work on improvement at the school and school-system level. Researchers have studied three leading CSR models that focus on high-poverty elementary schools and have found that two of them—America’s Choice and Success for

All—have had especially positive effects on students’ reading achievement, raising it by an average of 10 percentage points in each grade.¹⁰ Several other evaluations have found that the third, Core Knowledge, also has had positive effects on student achievement.¹¹

If one point of this story is that much better teaching and learning cannot be engineered from a great distance alone, another is that it cannot be done in a systemic fashion up close alone.

America’s Choice and Success for All, which are both private companies, offer schools a comprehensive design that addresses many problems concurrently. Most important, they work on classroom practice, designing new educational practices and helping teachers and school leaders to learn them by offering strong guidance for curriculum, teaching, learning, and school organization. The companies work closely with teachers for many years to improve classroom practices, and with school leaders to help them learn to manage their work so that it focuses more effectively on student learning. Put a little differently, these CSR models have built elements of the infrastructure that have usually been missing in U.S. schools. Given the schools’ weaknesses and the designs’ complexity, it would have been demanding to improve just a few schools. It was much more demanding to work with six hundred (America’s Choice), or more than a thousand (Success for All). To do that work,

the designers built national organizations to recruit and select schools; to teach school staff how to lead and teach; to recruit, hire, and educate staff; to find, adapt, or develop materials to use in classrooms; to monitor implementation and solve problems; to manage relations with school districts; to raise money to support all this work, and more.¹²

These are alternative school systems of a sort, and they do many things that few state and local school systems in the United States do, but that are familiar in other national systems: curriculum, professional education, quality control, performance analysis, and the like. They take individual schools as the primary unit of intervention, but theirs is not a scheme to reform one school at a time; they build systems of schooling and design those systems to support improvement in the smaller systems that we call schools. Anecdotal evidence suggests that several charter school networks—Achievement First, Knowledge Is Power, Aspire, and Uncommon Schools among them—do similar intensive, close, sustained work on practice, although with new schools that they create rather than with existing schools that they help to re-create.

If one point of this story is that much better teaching and learning cannot be engineered from a great distance alone, another is that it cannot be done in a systemic fashion up close alone. Both the CSRDs and the charter networks would not have been possible without comprehensive federal and state legislation that provoked and promoted improvement in high-poverty schools. Title I of the 1965 Elementary and Secondary Education Act provided high-poverty elementary schools with a stable source of funds they could use to purchase materials and services from the CSRDs. Other state and federal reform policies pressed schools to improve and

opened up opportunities for charter schools; the policies helped to create demand for the solutions that the CSRDs and charter networks offered. The federal Obey-Porter Amendment in 1997 helped to legitimize the CSRDs and offered funds to support state and local adoption. There can be helpful relationships between the close-in work of school improvement and the most distant public and private influences. We return to this question of whether influences distant from practice can be shaped to support the closer-in work of school improvement when we take up the Common Core State Standards.

Knowledge Production and Dissemination

A third reform initiative focuses on the diffusion of knowledge concerning effective teaching practices to influence literacy instruction. In recent years, researchers and government officials have collaborated to scrutinize research on reading, discern evidence of effective practice, and use that evidence to influence teaching and learning. These efforts focused on early reading, including phonics, phonemic awareness, and related matters. In 1997, Congress authorized a national panel “to assess the effectiveness of different approaches used to teach children to read.” After two years of reviewing research and meeting periodically, the National Reading Panel issued a report in April 2000 entitled “Teaching Children to Read” at a hearing before the U.S. Senate. The report systematized knowledge and used conventional means—written materials and professional meetings among them—to make the findings available to researchers, teachers, teacher educators, and others interested in the issue.

Because reading is an especially well-organized subspecialty of education that

includes researchers and practitioners, knowledge diffusion to practitioners about effective teaching practices has been relatively widespread throughout the United States. The actual effects on practice are harder to discern. Many studies based on teacher reports of instructional practice show that despite the advice of researchers and others, teachers still rely heavily on reading textbooks, or basal readers, to teach reading, particularly in elementary schools. For example, in 2000 James Baumann and others replicated the classic 1963 study by Mary Austin and Coleman Morrison, “The First R: The Harvard Report on Reading in Elementary Schools.” Baumann and his colleagues found that the share of teachers who relied on basal readers as curricular material declined from 97 percent in the earlier study to 83 percent—still a large share considering the extent to which research has advocated the use of other curricular materials in lieu of basal readers.¹³ More recent observational studies corroborate these teacher reports and also reveal high levels of procedural reading skills instruction.¹⁴ Although the reading community has been more successful than most in diffusing knowledge of best practices through programs, reports, and practitioner guides, what evidence there is suggests that those practices have not been implemented in classrooms extensively or with fidelity.

Improvement of Human Capital

A fourth collection of strategies seeks to improve the management and quality of human capital in schools and school systems. One set of initiatives aims to get more effective teachers into schools; another attempts to distinguish more- from less-qualified teachers either to reward the former or push out the latter, or both. The best-known examples of the first set of approaches are Teach for America (TFA) and some teacher residency

programs, which recruit bright and engaged individuals to teach in high-poverty schools with the support of training designed for them. These programs have succeeded in recruiting many thousands of teachers. For example, since 1990, nearly 33,000 individuals have joined TFA and, as corps members and alumni, are reported to have reached more than three million students across 100 urban and rural school districts in 27 states.¹⁵ The pool of recruits to these programs is growing, a fact that also can be counted as a success. The influx of bright new teachers represents an important change given the thirty-year drop in the average SAT scores of entering teachers.¹⁶

Yet the educational effectiveness of this approach depends on four things: a ready supply of very bright, highly educated people; no great disproportion between vacancies in teaching and the new recruits; the sponsors’ capability to educate recruits to do good work under difficult conditions; and the schools’ and school systems’ capability to use the new recruits effectively. The National Center on Education Statistics reports that 8 percent of the nation’s 3.3 million teachers leave the profession annually, creating more than 250,000 vacancies. Even the most effective alternative teacher recruitment program would not be able to fill this gap in a systematic fashion, particularly given high levels of selectivity in the program’s application process.

Furthermore, the effects of teacher recruitment programs on student performance have been mixed. A national randomized-control trial showed that the math achievement of students of TFA teachers increased about 0.15 of a standard deviation, or approximately one additional month of math, compared with that of students of non-TFA teachers,

but that students of both sets of teachers performed equivalently in reading. No significant difference was recorded for other student outcomes, such as attendance, although TFA teachers reported more problems with classroom management than their peers.¹⁷ That TFA corps members' students did no worse, despite their teachers' lack of teacher education and experience, is probably the real news. Although these trial findings are not a ringing endorsement of the education or qualifications of the regular teachers with whom the new recruits' work is compared, neither do they suggest that the new recruits are, on average, a dramatic improvement.

The key point, given our earlier analysis, probably concerns schools' and school systems' capability to use the new recruits effectively. It matters whether the new recruits are part of a strategy to improve particular schools or are simply used to plug vacancies that come up in the system. They are much less likely to have a sustained effect in the latter case. The recruits' effectiveness as teachers depends at least as much on the schools' ability to use them well as on the recruits' talent. That, of course, applies with equal force to the teachers already at work in the schools; the local action that is likely to make the new recruits more effective also would be likely to make the existing teachers more effective. Such action depends a great deal on state and local school systems and somewhat less on the new recruits and their sponsors. Local capability is indispensable, whatever the initiative and however appealing it seems.

The second human capital approach that seems likely to play a large role in school improvement is teacher evaluation and selection based on teachers' contribution to

students' learning. This approach aims to reward the more effective teachers, typically through merit pay, or to weed out the less effective, or both. It has considerable political appeal, for it promises to improve schools without meddling with curriculum, teaching, or local control. Because initiatives of this sort make measurement a central element in school improvement, their effectiveness depends on the quality of the measures, how they are used, and the circumstances in which they are used.

The most controversial aspect of these proposals is the use of longitudinal measures of student achievement, called value-added measures, to estimate teachers' contribution to students' learning. Teachers whose students make greater gains, given their entering scores, are judged to be more effective and to merit continued employment and perhaps other rewards. Teachers whose students gain less are candidates for re-education or dismissal.

These measures raise some technical concerns. One is inconsistency among the tests. Heather Hill, a Harvard researcher, found that students' performance on two tests of the same content area could vary depending on the test used, because the tests used different measures of the same content. Hence the performance rewards that their teachers would receive (or not) also would vary with the tests that were used.¹⁸ The concern would not arise if both teacher evaluation and testing were consistent between states, but if states used different tests, discrepancies would exist among states. Another concern is the tests' reliability, that is, the degree of error in measures of gains in students' achievement. Degree of error can be seen as the difference in the same students' scores on the same test taken at two closely

related times; the smaller the difference, the less concern about measurement error. Researchers persistently find test-retest reliability to be low, and Hill argues that distinguishing between the effectiveness of two teachers would be difficult unless their value-added scores were very far apart. Finally, many teachers teach subjects that fall outside annual standardized testing, which means value-added measures could not be used as part of their overall evaluation.

A more fundamental question is whether student test scores are a valid, unbiased measure of teaching quality. In a systematic study of elementary schools, Robert Pianta and his colleagues report only modest correlations between the value that teachers add to students' scores and how trained observers rank teaching quality.¹⁹ More recent studies use experimental and quasi-experimental methods to show that value-added measures do correlate to life outcomes for students, such as teen parenthood, college attendance, and earnings.²⁰ In an analysis of the measurement issues at stake, Hill concludes that the evidence "suggests that observational and value-added indicators of teacher effectiveness do converge, but the extent of convergence is unknown."²¹

Other research suggests that the validity of value-added measures is sensitive to the tests used, to how teachers and students are assigned to work together, and to resource differences among schools. Although evidence indicates that value-added measures do gauge teachers' effectiveness, careful consideration must be given to the ways in which this information is used. One positive outgrowth of the vehement reaction against the use of value-added measures has been to encourage new avenues of research on measuring effective teaching and to change

the conversation about teacher evaluations. It remains to be seen how the practice of teacher evaluation will be affected.

The issues raised here suggest the need to define very clearly what separates those teachers who are deemed effective from those who are not. One recent study suggests that replacing the bottom 5 percent of teachers with better teachers would dramatically change life outcomes of students.²² Still, making teachers' jobs contingent on students' test scores will affect how teachers approach and execute their work. States or districts that adopt merit pay proposals should take into account that many teachers lack the instructional know-how to boost students' scores. That gap between criteria of teaching proficiency and the capability of many schools and teachers creates an appreciable incentive to cheat, as recent developments in several cities have revealed in connection with No Child Left Behind and state accountability regimes.²³ In addition to the technical issues, merit pay schemes would be less likely to produce damaging results if they helped develop the professional capacity of teachers and schools.²⁴

Market-Based Reforms

An increasingly popular set of reforms is based on the idea that markets would be an effective means to improve schooling. Supporters of tuition vouchers and charter schools argue that a state school monopoly lowers educational quality by reducing schools' incentives to perform well and by making them less responsive to families. The assumption is that if the state monopoly can be broken or substantially weakened by creating markets for schooling, family choice (and incentives for schools to perform) would result in a better fit between what schools offer and what parents and students

prefer, thus improving quality. The chief impediment to quality is considered to be the political and economic structure of schooling, not the schools' educational organization and operation. If the political and economic structure of schooling can be significantly changed, supporters argue, educational organization and operation will improve.

Although some studies show significant effects for some charter schools in certain grades and subjects, these findings have not yet been replicated consistently.

Tuition vouchers have been tried only in limited and somewhat unusual circumstances, and the evidence on their operation and effects is also limited and rather uncertain. One study reported significant gains for African American students on standardized test scores (about one-third of a standard deviation), but others reported less promising results. Charter schools, by contrast, have been tried on a larger scale, and their numbers continue to increase every year; as a result, more evidence has been gathered about these schools' operation and effects. A recent meta-analysis of charter school studies by the Center on Reinventing Public Education, an independent research organization based at the University of Washington, reported mixed evidence on efficacy. For example, the analysis found that charter schools outperform traditional public schools in elementary school reading but underperform in high school reading.²⁵ A study by Stanford University's

Center for Research on Education Outcomes reported even less impressive results.²⁶ Although some studies show significant effects for some charter schools in certain grades and subjects, these findings have not yet been replicated consistently, and few of the studies offer any information about the educational program of charter schools that might help explain their varied efficacy.

Our conjecture, doubtless predictable from what we already have written, is that the central problems of U.S. schooling are systemic and that stand-alone charter schools are less likely to develop the capability to offer high-quality education than charters that are part of a system that mobilizes the human, social, and educational resources that support an intense and sustained focus on improving instruction. Unlike stand-alone charter schools, systems like *Aspire*, *Achievement First*, *Uncommon Schools*, and *Knowledge Is Power* appear to mobilize those resources, much like the comprehensive school reform designs discussed earlier. Steven Wilson makes the same argument, writing that if schools treated instructional improvement as a problem of building educational systems—using coherent, academically focused designs for instruction and management, including curricula, assessments, and teacher development to help capable people to do good work—the schools could succeed even if the teachers did not work 24/7, had families, and did not graduate from Princeton or Amherst.²⁷

The Common Core State Standards

Each of the approaches already discussed has been instituted in some form in the past twenty years in the United States; none has delivered dramatically different results in a systematic way. Partly in response to the continuing pressure for school improvement,

and with an eye to most states' likely failure to meet the goals of No Child Left Behind, a coalition of state agencies, governors, and interested private organizations created the Common Core State Standards Initiative, a standards-based reform focused chiefly on devising common academic standards and assessments. But in its efforts to raise academic achievement with these tools, the initiative may move beyond the state and federal policies of the past twenty years to support the development of some elements of educational infrastructure, including teacher education and curriculum. We explore this initiative here because it may have the potential to deal with some of the deeper problems of U.S. schooling, and because it raises important issues for efforts to improve teaching and learning in literacy and other subjects.

The Common Core is sponsored by the National Governors Association and the Council of Chief State School Officers (CCSSO). In the spring of 2009, the two associations announced that, in partnership with Achieve, a nonprofit education reform organization, they would devise "college and career ready" academic standards to "raise the bar" for all students in all states and to "increase the rigor and relevance" of state standards.²⁸ Standards in English language arts and mathematics have since been developed and reviewed and have been well received. Although adoption was voluntary, forty-eight states committed to adopt the standards even before they were in first draft.

One reason for that broad support is that, at its heart, the Common Core is a state effort to assume more initiative in education policy, in part by setting tasks for the states that trump anything the federal government might attempt. Another reason is that No Child Left Behind created an unsustainable

situation for states and the federal government. Many more schools were identified as failing than could be repaired, the goal of "proficiency" will not be attained by the mandated date of 2014, and state-to-state differences in standards and tests have damaged the measure's effectiveness and credibility. Federal officials welcomed the Common Core initiative partly because it provides a state-based solution that allows the federal government to extricate itself from many of these problems.

Federal policy makers can support common state standards and leave the most difficult work to states, while still playing a role that includes assistance and some oversight. The CCSSO report that launched the Common Core effort argued that federal policy makers should offer funds to help underwrite the states' costs, to help states develop streamlined assessment strategies that facilitate cost-effective international comparisons of student performance, and to boost federal research and development to provide states with more and better information about international best educational practices.²⁹ The U.S. Department of Education offered up to \$350 million to help states develop improved tests that align with the Common Core standards, and two consortia of states are currently working on developing such tests, a first in the United States.

Given this widespread federal and state support, the key question is whether the Common Core initiative can bring about substantial school improvement and thereby influence high-quality instruction in all subjects, including literacy. If the initiative develops well, it could bring greater coherence and quality to instruction, and perhaps even less inequality. But how the Common Core develops will depend on how states

and their supporting organizations deal with several issues.

First, will the Common Core actually set, and the states embrace, standards that, to paraphrase its words, raise the bar for all students, are rigorous, and become the common core of state school systems? The standards are voluntary. Although the CCSSO initially hinted that states would have flexibility to tailor common standards to their situations and preferences, it appears that states must adopt the standards wholesale.³⁰ David Wakelyn, the program director of the education division of the National Governors Association's Center for Best Practices, was reported to say, "You can't pick and choose what you want. This is not cafeteria-style standards."³¹

By March 2012 all but six states had adopted the standards in reading and mathematics, but writing and adopting standards is very different from aggressively implementing them. Thus far only a few states, Massachusetts and Minnesota among them, have adopted demanding standards and worked to implement them with fidelity. Both states improved test scores for many students, but both have had major problems improving education for children from poor families.³²

The broader question, however, is whether a reform restricted to standards and assessments can change schools. The Common Core website acknowledges as much. "States know that standards alone cannot propel the systems change we need," the website says, and lays out a list of tasks for states to tackle if they wish to make the standards effective.³³ But will states be able to clearly articulate what is expected of students academically? Will they be able to persuade test and text publishers to align their products to Common Core standards? Will states give

clear and detailed guidance for teaching and teacher education? Will they help schools and teacher educators to build the capability to support more focused, coherent, and improved instruction? That would require agreement not only on standards but also on the content and quality of instruction and teacher education. It also would require a great deal of re-education of educators and school administrators. In short, to put the Common Core standards into practice, states would have to build infrastructure.

The questions open up a paradox at the core of the Common Core: the initiative limits itself to standards and assessments, yet it proposes to deeply change schools.³⁴ The standards could enable participating states to articulate expectations for students to parents, teachers, and the general public; align textbooks, digital media, and curricula to the internationally benchmarked standards; ensure that professional development for educators is based on identified need and best practices; develop and implement an assessment system to measure student performance against the Common Core standards; and evaluate policy changes needed to help students and educators meet the Common Core state college and career readiness standards.

Yet, states and localities have rarely done such work, and their capability to do so effectively is quite modest. For example, to articulate clear expectations about student performance to parents, teachers, and the general public, state and local school systems would have to be much more explicit than they have been about what is to be taught and learned in school. Most schools, school systems, and governments have long avoided such clarity, in part because clarity produces conflict. Americans disagree deeply about

what should be taught and learned, and have since the institution of public education. Hoping to avoid such conflict, officials leading the Common Core initiative reportedly said they would not prescribe “how teachers get there [that is, raise student achievement], thus avoiding nettlesome discussions about whether phonics or whole language is a better method of teaching reading; whether students should be drilled in math facts; or whether eighth-graders should read *The Great Gatsby* or *To Kill a Mockingbird*.”³⁵ One way to avoid such disagreements is to paper over them with language offering little specific guidance, as standards often do. Another, familiar from many standards and textbooks, is to include nearly everything, an approach that also offers little guidance.

Aligning curriculum materials with standards and assessments presents another set of issues. The problems arise in part because valid judgments about alignment can be quite difficult to make. Arithmetic, for example, can be taught in several quite different ways, some traditional and didactic and others unconventional. Mathematicians and mathematics educators often disagree intensely about such matters, and such disputes would more than likely intensify if states got to the point of trying to achieve alignment. The problem is sufficiently daunting to prompt Jack Jennings, an experienced observer of education policy, to suggest that an independent agency might be better able than states to make determinations about alignment.³⁶ The idea is appealing, for, among other things, it could use economies of scale to reduce the costs of the work. The difficulty lies in persuading state policy makers to hand over such decisions to an independent agency when the policy makers could be the ones to pay the political price for the agency’s decisions.

Solving the problems of alignment also includes persuading those who produce textbooks, digital media, and curricula to align them with standards. It would be no small feat to persuade the handful of large private firms that dominate textbook and test publishing to revise their products to fit with clear and lean standards. The original Common Core report envisioned groups of states combining to shape markets, using their joint purchasing power to get what they want. But such groups would require the capability to be clear about what they wanted and to judge whether they got it. State education agencies have never invested much in making decisions about content coverage; they have few or no staff expert in such matters, and many states never even decide among textbooks, leaving those decisions to local school districts.

The chief effort to deal with some elements of this problem appears to center on curriculum development by the two consortia that are devising assessments aligned with the Common Core, because the proposed assessments would be most usable if there were curricula that were consistent with the assessments. But federal law explicitly prohibits federal funding of curricula, which would seem to exclude curriculum development by the consortia or other agencies that receive federal funds.³⁷ In addition, states and localities have very limited capability to design and produce curriculum.³⁸ The current plan to cope with this dilemma seems to be for the consortia to “develop curriculum frameworks, model instructional units and such, not entire curricula. Those resources, along with others, would be housed in a digital library and made widely available, but no state or district would be obliged to use them.”³⁹ This strategy may deal with the statutory problem, but whether

it will manage the larger political or educational problems remains to be seen.

The third action that the Common Core initiative envisions is the creation of “more focused pre-service and professional development.”⁴⁰ Achieving this goal would require deep and broad change in higher education, or the creation of new nonuniversity teacher-education programs, or both. Roughly the same problems would arise in re-educating teachers already in the classroom: most of what is offered in current “professional development” courses is not grounded-in-practice know-how for teaching academic subjects. The problems that we outline here are not an argument against change, but a recognition of the difficulty that would be entailed in bringing about effective change, and how modest educators’ capability is. Meaningful improvement in teachers’ instructional capacities would require unprecedented and forceful intervention in markets, schools, and higher education.

The states’ fourth assignment in the Common Core plan is to “develop and implement an assessment system to measure student performance against the common core state standards.” Two state consortia have undertaken to develop assessments that fairly represent those standards, an assignment that is unprecedented in U.S. education.⁴¹ Here again, although the Common Core is now at center stage, it is the states that will develop or sponsor the development of tests and use them to assess the extent to which their schools and students’ performance meet the standards. Presumably the states would then take steps to improve schools whose performance lags. Here, as with No Child Left Behind, the fifty state agencies that govern and operate public schools would assess their schools’ performance and

announce the results, strong and weak. But such self-assessment was one of the reefs on which No Child Left Behind foundered, and it is the sort of arrangement to which consumer advocates object when drug companies evaluate their own products. What criteria will states use to evaluate their schools’ performance, and who will set them? School resources and human capital differ greatly within and among states, and students’ scores on most tests will reflect those differences. Moreover, rigorous tests of deep reading comprehension, conceptual knowledge, and vocabulary would highlight more weakness in students’ performance than many conventional tests that stress procedural skills.

States could deal with these discrepancies in school resources and human capital through the ways in which they build the tests and frame and analyze the results. They could, for example, evaluate how well schools are doing by using value-added assessments, which report gains in individual student performance as the “value” that schools add to that individual performance. Although these measures have some technical problems, some of them would be addressed in an assessment system in which tests and curricula were consistent. Part of the appeal of value-added measures is that they are expected to de-emphasize the relationship between students’ scores and their families’ social and economic status, because they measure schools based on whether individual student performance improves and not on whether overall performance meets a mandated level. One nontechnical problem is how to decide how much added value is satisfactory, and how much is too little; if many states do use value-added measures to assess schools, this problem is sure to be central.

Alternatively, states could use assessments that are aligned with common standards, but, like No Child Left Behind, they could set different cut-off points, or test score thresholds, for determining achievement levels for acceptable work. That arrangement might preserve the appearance of commonality while enabling states to reduce the political damage and educational repair work that low scores bring. However, it would repeat some of the same problems that No Child Left Behind encountered and would doubtless provoke disputes about how much commonality had been lost. Test scores also could be adjusted for students' background and educational resources, moderating reports of their academic performance with evidence of social advantage and disadvantage. These are not the only alternatives, and each has strengths and weaknesses, but they illustrate the problems that await the analysis and reporting of assessment results, and their interpretation and influence.

However the assessments are analyzed and reported, they are supposed to lead to school improvement. What will be done when many schools and students are found wanting? What provision will be made to repair weak performance? Here again, states and localities with weak professional capacity will be responsible for the improvement of

weak schools. But practice can react back on policy: if state standards and assessments that are designed to improve schooling turn up large differences in student performance, states would have to either correct the problem or revise the measurement. If repairs were not forthcoming—that is, if practice appeared to persistently fail—the policy that drew attention to the problem and promised remedy could be at risk. In this eventuality, the Common Core would become the political and educational albatross that No Child Left Behind became, for roughly the same reason. If the Common Core is to succeed, then the need to devise and implement reliable ways to improve practice is acute.

That brings us to the most fundamental issue with the Common Core and the other reforms discussed in this article. Can educators and others mobilize the capability to help states and localities invent, adapt, and implement reliable ways to improve instruction? That question is especially significant in light of the Common Core's intention to promote intellectually deeper and more ambitious instruction. The Common Core could become an impressive departure from inherited school-improvement practice, but the question awaits an answer. The success of this enterprise—including but not limited to literacy instruction—will depend on it.

Endnotes

1. The discussion in this section is based on D. K. Cohen, “Teaching Quality: An American Dilemma,” in *Teacher Assessment and the Quest for Teacher Quality*, edited by Mary Kennedy, pp. 375–402 (San Francisco: Jossey-Bass, 2010).
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4. Seneca Rosenberg discusses the research in “What Makes a Good Teacher? Pursuing the Holy Grail of Education Research,” University of Michigan, School of Education, 2008.
5. Sean Corcoran, “Long-Run Trends in the Quality of Teachers: Evidence and Implications for Policy,” *Education Finance and Policy* 2, no. 4 (2007): 395–407.
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9. For a detailed discussion, see David K. Cohen and Susan L. Moffitt, *The Ordeal of Equality: Did Federal Regulation Fix the Schools?* (Harvard University Press, 2009), pp. 130–92.
10. Brian Rowan and others, “School Improvement by Design: Lessons from a Study of Comprehensive School Reform Programs,” in *Handbook of Education Policy Research*, edited by Gary Sykes, Barbara Schneider, and David N. Plank, (New York: Routledge, 2009) pp. 637–51. See also Richard Correnti, “Examining CSR Program Effects on Student Achievement: Causal Explanation through Examination of Implementation Rates and Student Mobility,” paper presented at second annual Conference of the Society for Research on Educational Effectiveness (Washington, March 2009).
11. Core Knowledge (CK) is another CSR model that requires common curriculum, among other elements of infrastructure, and evaluations report significant achievement gains for students in CK schools, although the research is not as rigorous as that of Rowan and others (see note 10). See Core Knowledge Foundation, *How Do We Know This Works? An Overview of Research on Core Knowledge* (Charlottesville, Va.: January 2004) (www.coreknowledge.org/research).
12. For several perspectives on the CSR models, see Christopher Cross, ed., *Putting the Pieces Together: Lessons from Comprehensive School Reform Research* (Washington: National Clearinghouse for Comprehensive School Reform, 2004).

13. Mary Austin and Coleman Morrison, *The First R: The Harvard Report on Reading in Elementary Schools* (New York: Macmillan Publishing, 1963); James Baumann and others, “*The First R* Yesterday and Today: Elementary Reading Instruction Practices Reported by Teachers and Administrators,” *Reading Research Quarterly* 35, no. 3 (2000): 338–77.
14. Robert Pianta and others, “Opportunities to Learn in America’s Classrooms,” *Science* 315 (March 2007): 1795–96.
15. Teach for America, “Teach for America Adds Largest Number of New Teachers and Regions in 20-Year History,” May 28, 2009 (www.teachforamerica.org/newsroom/documents/20090528_Teach_For_America_Adds_Largest_Number_of_Teachers_in_History.htm).
16. Corcoran, “Long-Run Trends in the Quality of Teachers” (see note 5).
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20. Thomas Kane and Douglas Staiger, “Estimating Teacher Impacts on Student Achievement: An Experimental Evaluation,” Working Paper 14607 (Cambridge, Mass.: National Bureau of Economic Research, December 2008). See also Raj Chetty, John Friedman, and Jonah Rockoff, “The Long-Term Impacts of Teachers: Teacher Value-Added and Student Outcomes in Adulthood,” Working Paper 17699 (Cambridge, Mass.: National Bureau of Economic Research, December 2011).
21. Hill, “Evaluating Value-Added Models” (see note 18).
22. Chetty, Friedman, and Rockoff, “The Long-Term Impacts of Teachers” (see note 20).
23. See, for example, Robert E. Wilson, Michael J. Bowers, and Richard L. Hyde, *Report to the Governor on Test Tampering in Atlanta Public Schools*, 3 vols., June 30, 2011 (www.ajc.com/news/volume-1-of-special-1000798.html); B. Jacob, “Accountability, Incentives, and Behavior: Evidence from School Reform in Chicago,” *Journal of Public Economics* 89 (5–6): 761–96.
24. These schemes could shape incentives in classrooms. Teachers cannot produce learning without learners’ active engagement. Can teachers fairly be held accountable for what students do not learn if students are not accountable for their learning and if they resist or slacken? If yes, the assumption is that teachers can control students’ motivation, an assumption we reject. Teachers can influence students’ motivation, and exerting that influence in ways that advance learning is an important element of teachers’ craft, but students are not automatons; their will is their own. Once students learn that they can influence teachers’ fates, unusual incentives could be created. Not to take these aspects of merit pay seriously would be

roughly comparable, in health care, to designing systems to hold doctors accountable for whether patients take their medicine, follow instructions, and get well.

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28. National Governors Association, Council of Chief State School Officers, and Achieve, *Benchmarking for Success: Ensuring U.S. Students Receive a World-Class Education*, (Washington: 2008), p. 1.
29. Council of Chief State School Officers, “Common Core State Standards Initiative” (Washington, 2009), p. 7.
30. Ibid.
31. Catherine Gewertz, “State School Boards Raise Questions about Standards,” *Education Week*, February 3, 2010 (www.edweek.org/ew/articles/2010/02/03/21nasbe.h29.html?tkn=SZBFYyo9k83lnCjVJTph2BWpC7jrtP4ouTe8). The story also pointed out that “some thought that ... states could craft a set of standards with 85 percent of the common standards and 15 percent of their own. But NGA and CCSSO officials said that states must approve the entire common-standards document verbatim. They may choose to add 15 percent of their own material. How that 15 percent would be measured remains an open question.”
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33. National Governors Association and Council of Chief State School Officers, “Common Core State Standards Initiative Frequently Asked Questions” (www.corestandards.org).
34. Ibid.
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36. Gewertz, “State School Boards Raise Questions about Standards” (see note 31).
37. This provision is a 1979 congressional response to the political explosions that followed the curriculum titled *Man: A Course Of Study*, funded by the National Science Foundation.
38. The issues are discussed in Catherine Gewertz, “Can the Federal Government Fund Curriculum Materials?” *Education Week* (blog), February 11, 2011, http://blogs.edweek.org/edweek/curriculum/2011/02/can_the_federal_government_fun.html; and Rick Hess, “Is Common Core Running Off the Rails Already? Waving the Caution Flag,” *Education Week* (blog), February 17, 2011, http://blogs.edweek.org/edweek/rick_hess_straight_up/2011/02/is_common_core_running_off_the_rails_already_waving_the_caution_flag.html.
39. Gewertz, “State School Boards Raise Questions about Standards” (see note 31).
40. National Governors Association and Council of Chief State School Officers, “Common Core State Standards Initiative Frequently Asked Questions” (see note 33).

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