The Case for Coherent High Schools

Paul T. Hill and Tricia Maas

APRIL 2015

About This Report

ACKNOWLEDGMENTS

ABOUT THE AUTHORS

Paul T. Hill is a research professor at the University of Washington Bothell and the founder and former director of CRPE. His book, *Reinventing Public Education* (Chicago University Press, 1997), proposed that school districts contract with independent parties for schools, rather than operate schools directly. This book has led to profound changes in public education in many big cities. His most recent book, with co-author Ashley Jochim, is *A Democratic Constitution for Public Education* (University of Chicago Press, 2014). Other books by Dr. Hill include *Strife and Progress: Portfolio Strategies for Managing Urban Schools* (Brookings, 2012), and *Learning as We Go: Why School Choice is Worth the Wait* (Hoover Institution Press, 2010). Hill is a Senior Fellow at the Hoover Institution. He chaired Brookings' National Working Commission on Choice in K-12 Education, which issued its report, *School Choice: Doing It the Right Way Makes a Difference*, in November 2003.

Tricia Maas is a research analyst at CRPE and a PhD candidate in the College of Education at the University of Washington. Tricia's recent work has focused on charter school policies and practice, as well as school- and district-led efforts to personalize education through student-centered and blended learning structures. Prior to her time at the UW, Tricia taught high school math at a traditional public school in Charlotte, North Carolina, and at a charter school in San Jose, California. Tricia holds BAs in Economics and French from the University of Richmond and an MA in Education Policy from Stanford University.

ABOUT THE CENTER ON REINVENTING PUBLIC EDUCATION

Through research and policy analysis, CRPE seeks ways to make public education more effective, especially for America's disadvantaged students. We help redesign governance, oversight, and dynamic education delivery systems to make it possible for great educators to do their best work with students and to create a wide range of high-quality public school options for families.

Our work emphasizes evidence over posture and confronts hard truths. We search outside the traditional boundaries of public education to find pragmatic, equitable, and promising approaches to address the complex challenges facing public education. Our goal is to create new possibilities for the parents, educators, and public officials who strive to improve America's schools.

CRPE is a nonpartisan, self-sustaining organization affiliated with the University of Washington Bothell. Our work is funded through private philanthropic dollars, federal grants, and contracts.

Table of Contents

Introduction

Americans have been worrying about high schools—and debating how to make them better—since at least the late 1950s. Unfortunately, the large comprehensive high schools that educate the majority of U.S. students benefit only those who are most able and self-directed.

Leading scholars and practitioners have known for a long time about an approach to high school education that is more motivating to more students and provides rich learning opportunities for all, including the most disadvantaged. We refer to schools using this approach as coherent high schools. These schools are grounded in a set of explicitly stated values, hold all students to high academic and social expectations, provide academic supports and opportunities for meaningful relationships with adults, and demonstrate the links between school and real life. Although their methods are diverse, coherent high schools share the goal of preparing students, both academically and socially, for a range of college and career options.

> Coherent high schools are grounded in a set of explicitly stated values, hold all students to high expectations, provide academic supports and opportunities, and demonstrate the links between school and real life.

Examples of these schools come from all sectors and have served the most disadvantaged student populations. But they are rare. Developing them requires a great deal of time and thought and makes serious demands on students, teachers, and families. In addition, coherent high schools tend to be small and often cannot support attractive features like winning football teams or marching bands. Finally, such schools are difficult, though not impossible, to create and sustain within the constraints of most traditional school district structures, teacher collective bargaining agreements, and age-old policies about how students use their time.

This paper makes the case for such schools, explains why they are hard to get and keep, and shows how we can make them much more broadly available through changes in policy and philanthropic investments. Drawing from examples of successful and unsuccessful high school redesign efforts, we argue that a supportive context is a necessary condition if coherent schools are to develop and sustain at scale. Such contexts stabilize leadership and visions and allow for school-level autonomy and choice for both staff and families.

The Rise of the Comprehensive High School

The movement toward focused coherent schools started with Harvard President James B. Conant, who favored a different kind of high school entirely. Conant's 1959 book, *The American High School Today*, recommended that high schools become comprehensive, with a vast array of course offerings that could meet the needs of all children whether they were college-bound or sure to enter the work force immediately upon graduation.[1] Conant's book crystallized what was already happening in rapidly growing suburbs, where communities were building high schools with elaborate facilities and extensive course offerings. High school course catalogs came to resemble those of small colleges in size and complexity.[2] To pay for a large and diverse faculty, high schools also became very large.

Conant directly attacked high schools that offered limited "core" curricula and expected all students to complete the same courses. In Conant's experience, the prep school model was elitist, and not likely to serve the needs of a diverse nation or permit the most advanced students to take

extensive specialized coursework. The argument sat well with mainstream educators. In a review of Conant's book, William Van Tyl, chair of NYU's Department of Secondary Education, called it an eloquent case for the comprehensive American high school, arguing that it "cuts the ground from under the selective academic schools and the class-perpetuating European system … James B. Conant states as his top priority the elimination of the small high school, thus joining the legion of modern educators who have fought stoutly for consolidation."

Conant was influential. Prep schools and less elite high schools run by religious groups continued as before, but the majority of new public high schools were built to be comprehensive. Throughout public education, the idea took hold that a good school had a very diverse curriculum and allowed students many alternative courses of study. At a time when the student population was growing rapidly, many new schools were built and facilities became larger and more elaborate to accommodate performance and recreation spaces, as well as course-related facilities like darkrooms and sculpture studios. Faculties became departmentalized, organized according to discipline, and less guided by a common sense of mission.

FAITH IN LARGE COMPREHENSIVE SCHOOLS WANES

Americans continued to fret about high school performance. Despite the growth of comprehensive high schools, there was no evidence that American children were consistently better prepared for higher education than before. Student test scores, including the Standardized Aptitude Test, dropped noticeably in the 1960s and 1970s.[3] Comprehensive high schools might or might not have contributed to these results, but test score declines opened the door for criticism and new ideas.

Scholarship on adolescent development and the determinants of school effectiveness provided a counterpoint to the comprehensive school consensus. In 1977, James Coleman found that common schools—by which he meant those where all students took the same courses regardless of ability— were more effective at equalizing student outcomes than schools that let students choose different paths.[4]

Scholarship challenging comprehensive schools continued to emerge throughout the 1980s. Ted Sizer's *Horace's Compromise* made the case for schools that used a central curriculum and a common pedagogy. [5]A 1985 policy brief by the Carnegie Foundation's Ernest Boyer argued for a strong core curriculum and greater focus on molding students' values through community service.[6] E.D. Hirsch's book, *Cultural Literacy*, argued that all children need to understand certain key ideas underpinning American society, and that schools should be organized to expose children to them.[7]

In studies of Catholic schools, Coleman found that strong communities, and a commitment to expose all students to the same core materials, reduced achievement differences associated with race and income.[8] Coleman's work was respected but did not immediately undermine the "Conant" consensus, in part because it focused on religious schools and thus was considered irrelevant to public education. Coleman's influence was also limited by his emphasis on families' ability to choose their child's school, an idea that, at the time, had few adherents. He reasoned that schools might take different approaches to instruction and student motivation and that students, families, and teachers would all be more committed to their school's approach if they had chosen it. Coleman supported "common schools" in which students of diverse backgrounds could learn together, but he thought family choice, not mandated attendance, provided the right circumstances for success.

The most powerful attacks on comprehensive schools came in 1985 with the publication of *The Shopping Mall High School*.[9] This book showed that many students chose coursework that would not prepare them for any known future, and that many course offerings had been made less demanding in response to students' tastes. Some high schools provided rigorous courses for the ablest students and worked hard to address the needs of the disadvantaged, but most left

the middle range of students to fend for themselves. In the same year, Jeannie Oakes published *Keeping Track: How Schools Structure Inequality*, which showed how large comprehensive schools rationed advanced courses, reserving them for the ablest (and usually the most socially advantaged) students, and "tracked" less advantaged students into course sequences that could not prepare them for success in college or careers.[10]

In 1988, Gerald Grant published a book based on his experience bringing academic focus and a studious climate to a large comprehensive high school with racial tensions that had retreated from efforts to fully educate poor and minority students.[11] He blamed this failure on the dominant comprehensive high school model where corrosive individualism, lack of moral underpinnings, bureaucracy, and fragmentation into departments and initiatives let students fend for themselves. He urged parents and educators to rethink their expectations for high schools and reject the bureaucratic arrangements that weaken schools.

By the early 1990s, "shopping mall" schools were under broad attack. Some opponents were going beyond critique to develop ideas for reform. Sizer and Hirsch had built organizations to promote the kinds of schools described in their books, and had become critics of the public school system pattern of expecting every school to deliver any kind of education any student might want. The authors of two new studies on the effectiveness of Catholic schools for disadvantaged students urged policymakers to change district policies to support public schools built to use similar methods.[12] Coleman's earlier argument for school choice—not as a market mechanism, but as a supportive condition for well-defined, instructionally coherent schools—got another hearing.

THE COHERENT APPROACH TO HIGH SCHOOL EDUCATION

Despite the obvious complementarities among the school reform visions of Hirsch and Sizer, and the studies by Coleman, Bryk, Hill, and others, their ideas never jelled into a named theory or movement. The reformers and scholars knew and admired one another's work, but all were more interested in developing their own ideas than in consolidating them with others. They all agreed on several important ideas:

- Establishing a whole-school community that shares goals for student success and core values about honesty, reciprocity, and respect (whether expressed in secular or religious terms).[13]
- Grounding policies and decisions in these goals and values and legitimizing actions by providing evidence of how others have benefited from similar structures.
- Communicating high expectations by using the same rigorous curriculum for all students, regardless of their academic history. Students who lack foundational skills would get help learning these, but they are included in the substantive courses and kept in mainstream student peer groups.[14]
- Ensuring that the curriculum engages all students intellectually through exposure to challenging questions and work that asks students to apply their knowledge.
- Personalizing education by providing academic supports to struggling students and opportunities for all students to build personal relationships with adults.

We refer to this set of ideas as "the coherent school principles."

Though there was tacit consensus that schools should adhere to these principles, there was a lack of clarity about what it took for a school to put them into practice. Most of the schools from which the principles were derived were well established and had been explicitly founded on the very same ideas that still informed their current practice. Moreover, those ideas were well encoded in books, curricula, training and formation programs for educators, and tradition. Some

were founded on faith-based ideas about personal development and productive ways of thinking. Even the secular schools embodied the values of their founders (e.g., Hirsch's appreciation for seminal literature and scholarship from his Jewish tradition, and Sizer's New England Protestant appreciation for community discussion of hard questions).

A hallmark of coherent schools is the thoughtfulness that governs their development. Though it was clear that new schools based on coherent school principles could be reproduced—religious groups had done it, as had Sizer and Hirsch, if less consistently—it was not clear how easily or how often this could be done. (Religious groups often required that school leaders go through years of formation and apprenticeship before they were made school heads; these pipelines produced results, but slowly.) It was not at all clear that existing schools could take on coherent school principles readily without some sort of intellectual and organizational conversion experience. One of the authors of this paper once tried to formulate a set of steps required to create or transform a school according to the coherent school principles. The list, which was shared widely in professional circles but never formally published, is daunting:[15]

1. Start with a worked-out theory of youth development, whether based on religious- or research-based principles, and whether encoded in literature or a strongly established tradition.

2. Found the school around a few individuals who fully understand this tradition and what it implies for teaching and student guidance.[16]

3. Make the school's core ideas as explicit as possible so that the ideas ground conversations in the school community and so that newcomers, whether teachers, students, or parents, easily understand them.

4. Build a school culture that conveys unwavering expectations and academic standards for all students that are rooted in the legitimacy of the school's core principles and its demonstrated ability to produce effective graduates.

5. Use extensive internal communication to establish a dynamic organization that adapts and responds as a single entity to new challenges in light of the school's basic principles.

6. Build strong external constituencies of three kinds: customers (families who trust the school and rely on it to educate their children), external supporters (funders and intellectual mentors who buttress the school financially and educationally), and validators (employers and higher-level schools to which students aspire and that can provide feedback on the school's performance).

7. Keep control of funds and key decisions about hiring and curriculum.

8. Satisfy parents by keeping promises, not by compromising principles, and keep the initiative on accountability—asserting what results the school hopes to attain for students, where it is now failing, and what it will do next.

To build a community that universally shares and maintains a vision and values, coherent high schools strategically hire for commitment to the school mission and community.[17] Staffs use extensive collaboration and shared leadership, which ensures that as school policies and practices evolve, they continue to coherently reflect the school's central purpose.[18]

Coherent high schools also clearly communicate goals and policies to students and are unwavering in their expectations that *all* students, regardless of preparation or background, meet the school's rigorous academic and behavioral expectations.[19] To ensure that all students succeed, teachers monitor student progress and use the data to make decisions about instruction and intervention. The school's philosophy and approach is not open to debate. Instead, adults in coherent high schools use past successes with their approach to legitimize the school's values, expectations, and

decisions. Students and parents understand social and academic expectations in the school; when a student does not meet expectations, school responses are predictable and designed to support the student's progress.

Content and lessons are relevant and engaging to students in coherent schools.[20] This may mean that instruction is inquiry- or project-based, student-driven, or collaborative.[21] Schools also integrate community service, field studies, or work-based learning into the curricula to attach meaning to schoolwork and springboard students into conversations about challenging questions.[22] These schools use engaging partnerships and experiences outside the school to support, rather than replace, a rigorous curriculum.

A necessary complement to high academic and social expectations is external supports, a key factor in the persistence of many coherent private schools and a component of the New York City small schools strategy.[23] School leaders and teachers benefit from connections to others in similar schools, and schools can maintain their focus by hiring professionals who have experience as students or teachers in similar schools. Schools serving disadvantaged groups also need sources of support for students including tutoring, opportunities for recovery coursework, or mentorships that ensure each student follows through on his or her academic responsibilities, ranging from homework completion to taking necessary coursework and filling out college and financial aid applications.

Coherent high schools also provide social support like advisories, small school size, a high-quality counseling staff, frequent communication with families, and leadership opportunities for students. These activities, which enable strong adult-student relationships and opportunities for guidance, reinforce value systems and provide students a reason to come to school.[24]

"SCALING UP" AND LOSS OF FOCUS

By the early 1990s, the arguments against large comprehensive schools had come to the attention of politicians and big business leaders. As a result of the 1989 Presidential Education Summit, the country's biggest businesses created the nonprofit New American Schools Development Corporation. Its mission was to sponsor the development of new designs for schools that would be neither large nor comprehensive. Instead, they would focus on motivating and effectively educating children from all racial and socio-economic backgrounds.

The U.S. Department of Education also sponsored a major new research center on school restructuring at the University of Wisconsin to pursue lines of work suggested by recent books on the value of simpler, focused schools. The center employed Bryk and Valerie Lee, his key collaborator on *Catholic Schools and the Common Good*, and produced important new work that fully supported the coherent school principles and need for exemplary school leaders.[25]

Conditions looked ripe for a concerted effort to make schools based on the coherent principles available to more students than ever before. But the ideas suffered from a lack of authoritative formulation. In the absence of an acknowledged leader or spokesman, there was nobody to defend the coherent school principles or to argue either that they were complete (not improvable by addition) or interdependent (and therefore not separable).

Nor did any of the formulators work to maintain the distinction between the coherent school principles and the mechanisms that helped schools to put them into practice. In the mid- to late-1990s, significant means-ends confusion occurred. Small size, charismatic leadership, teacher community, and family choice were recognized as characterizing many schools built on coherent principles.[26] But smallness, open internal decision-making processes, mutual support among teachers, and family choice were facilitative, not defining: schools could have those attributes and

still not operate under the coherent principles. Nonetheless, the terms "small schools," "teacher community," and "schools of choice" became popular labels and obscured the importance of the deeper coherent school principles.

Moreover, sponsorship by the federal government and big business proved a double-edged sword, as resources for rethinking high schools increased but clarity of ideas and goals declined. New American Schools solicited new designs for schools and funded 11 teams to develop them. However, some of the bolder proposals were ruled out as too challenging to unions and school districts. The design teams also experienced pressure to generate income, which led most to sell services that were, compared to the teams' original designs, more narrowly defined and less challenging to traditional school practice.[27] A federally funded initiative on "comprehensive school designs" was meant to extend the New American Schools effort and promote widespread adoption of new ideas for school operations and instruction. The effort to affect large numbers of existing schools led to compromises in implementation so that few schools fully used the designs they had nominally adopted.[28] Although several New American Schools designs approached the work with an appreciation for the importance of deep and comprehensive reform, the program leaders underestimated the influence of local contexts. Unstable district leadership and budget shortfalls meant that schools could not rely on a consistent set of allies to support their work. Incoherent visions of reform in district offices and distrust among schools, district staff, and unions further complicated efforts.[29]

> Sponsorship by the federal government and big business proved a double-edged sword, as resources for rethinking high schools increased but clarity of ideas and goals declined.

By this time, the coherent school principles first formulated in the 1980s were, if not lost, awash in a sea of half-measures and political compromises. By the time the Bill & Melinda Gates Foundation chose high school reform as its initial education focus in 2000, what was initially a complex set of ideas had boiled down to the concept of "small schools." The Foundation committed to encouraging creation of new small schools and transforming existing large schools into multiple smaller ones, in the hopes that other desirable school attributes would come along with small size—including common focus, high expectations, personalization, respect and collaboration, performance-based progression, and use of technology as a tool.[30] But because these expectations were not explicit in the small school model, how they were to develop was not clear.

Unlike the scholars and reformers who had formulated the coherent school principles, the Gates Foundation was not content to work with a small group of like-minded people. It hoped to expand the supply of effective schools dramatically in a short time via financial incentives that could attract educators who might not otherwise be interested in changing their schools.

The originators of the coherent school principles came together at a meeting convened in Seattle by the Gates Foundation to address how the Foundation should support high school reform. A group led by Teachers College president Michael Timpane and including Ted Sizer, Fred Newmann, Linda Darling-Hammond, Anthony Bryk, Mary Butts, Paul Hill, Tony Wagner, Gene Bottoms, and Judy Codding, advised the Foundation on goals and means. At a climactic moment, Darling-Hammond spoke of the impossibility of transforming large comprehensive high schools, and said to the Gates Foundation leader Tom Vander Ark, "The only way to get schools of this kind is to start them. They must be small, yes, but they must also be assembled of people who all share an understanding. You can't take a faculty accustomed to compartmentalization and parallel play, and make a coherent school out of them."

The Gates Foundation's commitment to speed and scale made it reject this advice in most cases and emphasize efforts to subdivide existing large comprehensive high schools into multiple, smaller, hopefully coherent ones. The Foundation offered money for existing school staffs to divide themselves into design teams and plan how to operate multiple (usually four) new schools within one building. These efforts rarely succeeded; they struggled for some practical reasons (faculties could not decide how to divide up rare resources like mathematics teachers or who would get the most challenged students). But the real problem was deeper: teachers were asked to formulate new identities for their schools, but rarely were these new identities deeply founded in youth development theory and shared values, as the exemplar schools had been.

The Gates Foundation ultimately abandoned its small high schools initiative as a failure, though many continued under sponsorship from New York City Schools and the Carnegie Corporation of New York. But the Gates Foundation's initiative taught a lesson: that large numbers of coherent schools cannot be built or transformed in a short time without clarity of mission or flexibility about whom to employ or what work to assign them.

RECENT HIGH SCHOOL REFORM EFFORTS

The federal School Improvement Grant (SIG) program, a more recent attempt to improve the lowest-performing high (and middle and elementary) schools, captured some lessons from the Gates Foundation initiative. Most of the turnaround options that SIG presented to schools, including restarting the school, replacing the principal and at least half of the staff, and closure, acknowledged the importance of a clear school vision and fresh, committed faculty (although they admittedly ignored other critical components of school turnaround). But SIG also provided a fourth option that required two elements: a new school principal, and efforts from the school toward instructional reform. Complex union negotiations, political challenges, and a shortage of high-quality teachers led most SIG schools to select the fourth approach, which was easiest to implement but lacked clear research support and often resulted in minimal change.[31]

Districts also did not make necessary policy adjustments to encourage the emergence of mission-driven SIG schools. Although SIG encouraged districts to increase school autonomy, few districts did so. Instead of creating structures and flexibilities to support new staffs and schools founded on clearly defined principles, many SIG districts and schools focused on compliance and used SIG dollars to adopt "add-on" reforms.[32]

But the Gates Foundation's small schools initiative also inspired some work that resulted in lasting, replicable results. Work done in New York City provides one example. Starting in 2002, the NYC school district pioneered the development of large numbers of small, focused high schools to share buildings that formerly housed low-performing, large, comprehensive schools.[33] District leaders selected school leaders known to impart clarity and focus to their schools and provided funding for those leaders to plan a school before opening it. The district also allowed those leaders to choose leadership teams and teaching staffs and to affiliate with organizations like New Visions, which had years of experience in new school creation.[34] Leaders also controlled school budgets and could make trade-offs between different kinds of expenditures. Teacher professional development and evaluation were controlled at the school level. In their first year of operation, the new schools admitted students for 9th grade and subsequently added a grade each year until they were complete high schools. Students were admitted by citywide lottery.

In New York City's small schools, investments in planning and staff recruitment paid off, as did the frequent use of ideas like Sizer's and Hirsch's, and other reproducible models such as the International Baccalaureate. Educators in the most effective New York high schools attribute their success to academic rigor and personalized relationships in their schools, enabled by small size and

the ability to hire hardworking, flexible teachers.[35] But successes were not isolated to a few cases. A decade after reforms began, a rigorous randomized control study has shown that New York's small high schools are highly effective at raising student test scores and increasing graduation rates.[36] Coherent schools also exist in other district settings, though rarely as systematically as in New York (see Box 1 for an example of a coherent school in Oakland).

BOX 1: LIFE ACADEMY

Life Academy, located in the Fruitvale neighborhood of East Oakland, serves about 270 students and operates as part of the Oakland Unified School the District (OUSD). Despite serving a highly impoverished student body (99 percent of Life Academy's students receive free or reduced-price lunch), students complete college preparatory courses at rates nearly double those in OUSD and regularly report higher average test scores than schools serving similar populations. The school's clearly stated mission to "interrupt patterns of injustice and inequity for underserved communities in Oakland" grounds school conversations daily. Life Academy does not have competitive athletic teams or extensive arts programs, but provides students with a rigorous curriculum and authentic learning experiences through field trips, project-based learning, and health and science required of all 11th and 12th grade students. The school, which has no admissions requirements, attracts far more students and families than it can accommodate. Families have reported that they are attracted to the school because it is "safe and small" and gives students a "real chance" to go to college.

Administrators at Life Academy are selective in hiring teachers, and seek individuals with a deep commitment to the school's mission. The school team is also intentional about inculcating new members of the school community to the school culture, which is focused on an applied, college-prep education. For teachers, intensive professional development and strong collaborative relationships among grade-level teams facilitates this acculturation. For students, the small school size, advisory structures, and regular inquiry-based learning opportunities help to build a tight community with a shared focus.

Sources: Nikole Richardson and Joe Feldman, Student-Centered Learning: Life Academy of Health and Bioscience (Stanford, CA: Stanford Center for Opportunity Policy in Education, 2014); Diane Friedlaender et al., Student-Centered Schools: Closing the Opportunity Gap (Stanford, CA: Stanford Center for Opportunity Policy in Education, 2014).

Successful high schools have also recently emerged in other contexts. Some charter management organizations (CMOs) serving at-risk high school students, like YES Prep, Mastery Prep (see Box 2 for a detailed profile), KIPP, and Summit Public Schools, have reliably produced impressive student outcomes.[37] Although the CMOs vary in the amount of freedom they give individual school leaders, a hallmark of the successful KIPP network, which now operates 22 high schools, is principal autonomy over school-level decisions. This freedom helps leaders respond to school-specific needs and fosters trust in school communities. Conversely, a national study of CMOs found that those imposing detailed controls on curriculum, hiring, and professional development, and that frequently sent central office staff to visit schools, experienced higher principal turnover and were, relative to all CMOs, lower on measures of organizational health.[38]

It is clear, however, that operating as a charter school does not guarantee success. Despite their flexibilities, many CMOs have failed to establish and replicate coherent models and cultures,

especially in high schools. Even the highest-performing CMOs have struggled to balance a supportive youth development system with high academic and behavioral expectations. In light of weak college persistence numbers, this is something that many CMOs are attacking head on. KIPP, Collegiate Academies, and others are now exploring how they can make their systems less punitive and create more student-driven environments without compromising the high standards that have historically defined their schools.[39]

To find the best people to establish and maintain such a school culture, many high-performing CMOs have competitive programs that select and train strong teachers—who are usually identified internally—to become principals. Increasingly, programs are also developing teacher residency and certificate programs to inculcate new teachers into the organizations.[40]

BOX 2: MASTERY CHARTER SCHOOLS

Mastery Charter Schools, a CMO that operates seven secondary schools and eight elementary schools in Philadelphia and Camden, serves a student body that is 88 percent African American and 86 percent who are eligible for free or reduced-price lunch. Although the network has opened many of its schools as "fresh starts," Mastery stands out as one of the few charter operators that has undertaken school turnarounds. The network has faced challenges in taking over existing schools, but it has also met considerable success. Over 96 percent of Mastery's class of 2014 earned college acceptance.

Mastery schools have a tight college-going culture. Teachers regularly collect and reflect on student data to adjust and personalize their instruction, and students are pushed to self-direct and take ownership over their learning. Students prepare for college and career through rigorous coursework, but also through a six-month internship. The schools prepare students for these professional experiences with an 18-week seminar that focuses on developing "soft skills" like workplace communication and time management.

Mastery's human capital strategies have been critical to its success. The CMO selectively hires teachers and leaders who are "on one page regarding school culture, student support, and discipline" and invests heavily in training and support once school teams are established. Principals spend substantial time working with teachers on their instructional practice, and schools employ an assistant principal of instruction or instructional coach to regularly observe and provide feedback to teachers. Schools have early release once a week and teachers spend this time to plan collaboratively. Every six weeks, staffs take a full day to work with each other and leadership to benchmark progress, dig deeply into student data, and create improvement plans.

Source: *School Turnaround in Philadelphia: Mastery Charter Schools* (Watertown, MA: Education Resource Strategies, n.d.); the website of Mastery Charter Schools.

These recent examples and ongoing research continue to validate the coherent school principles formulated nearly 30 years ago. It is increasingly apparent that each of the attributes is critically important and that none can succeed in isolation. Successfully holding all students to high academic expectations requires academic support systems and engaging instruction. And personalized instruction cannot provide students with a rigorous education if accompanied by watered-down academic expectations (as is all too often the case in student-centered models). Together, however, the coherent schools attributes provide the foundation for a coherent, high communication, mission-focused organization.

Coherent schools are not accidents. They come about because their commitments to the student experience are explicit and widely appreciated and because teachers, parents, and students choose them knowing what to expect and what will be expected of them. Schools that are not explicit about how their parts fit together and don't control their boundaries (whom they employ, student mission based on informed choice) can neither attain a high degree of coherence nor, when they make some progress, sustain it.

IS IT POSSIBLE FOR A POORLY INTEGRATED SCHOOL TO BECOME COHERENT?

Although there have been some isolated cases of turnaround successes, the prevailing consensus is that schools starting from scratch have a "tremendous advantage" in becoming coherent.[41] This was a key finding from a long-term evaluation of the Gates Foundation's small schools initiatives and has been true of post-Katrina schools in New Orleans.[42] The culture, mission, and structures of a school all appear to be much easier for a school leader to shape in the context of a new school. Fresh-start schools also demand heavy investment and commitment from the district and community, whereas transformation schools can easily become a forgotten initiative.

But as with charter freedoms, the opportunities that come with starting fresh do not guarantee success. In fact, "most start-ups fail or bump along in mediocrity, even in sectors that, unlike education, enjoy abundant venture capital and a ready supply of capable entrepreneurs."[43] Especially in their early years, new schools must intentionally take advantage of their blank slates to carefully create and maintain school structures that enable coherent practices.

Starting new schools is also a slow process. So what can be done for the millions of children doing poorly in incoherent high schools? The case for trying to transform existing schools is compelling. But transformation schools face two major challenges: 1) creating a cohesive staff that universally seeks common high academics standards, and 2) establishing coherent processes within a school. Schools seldom change much if staff members are able to reject any change that creates discomfort, are unaware of what others have done, and are unable to get help from people who have successfully transformed similar schools. Converting factionalized existing staffs into those that operate as open-information units, propelled by high expectations and clear goals, requires that schools change their adult culture in ways that threaten the privacy and autonomy of teacher practice. School leadership must be willing and able to replace teachers who strongly resist these changes with individuals who are invested in the new school vision.

Establishing a coherent set of policies is also challenging for transformation high schools. Investing large amounts of money in failing schools has often created activity, but resulted in little change. School leaders undertaking change efforts must have real freedom to align all actions to a clear goal and improvement plan that is consistently communicated to everyone in the school community. Families and staff must have the freedom to change schools if they disagree with this vision. To motivate such disruptive change, districts must have accountability and incentive systems in place that are meaningful to school leaders and galvanize deep change.

Staff members need to believe that their school is not working and must change to achieve a well-defined goal. A significant majority must agree on specific new approaches to instruction, teacher work, student motivation, and faculty-student relationships. Faculty members and families that are not comfortable with the changes must be free to move to other schools. School leaders must have resources for staff training and collaboration, and professionals must have access to role models and mentors from schools that have successfully changed. Under these circumstances, school transformation is possible, though still difficult.

Whether a school is new or transformed, failure is always a possibility. Schools (charter, traditional public, or private) can be made to change further if they don't work for students. Or they can be closed. Efforts to transform conventional public schools should anticipate some failures and be prepared to abandon them.

Why Coherent Schools Are Difficult to Get and Keep

There is no body of research evidence to show that any approach other than the coherent school principles is as effective. It is clear that building coherent schools is demanding and takes time, but New York City, several CMOs, and the creators of effective private school networks have shown that such schools can be built and reproduced. The need to give millions of children access to more numbers of effective high schools remains. We return to the question that nobody has answered: what does it really take to establish a high school that prepares its students for college and career?

Many authors have analyzed the failure of particular schools as if all their problems have come from within, noting that schools tend to fail due to low expectations, a reform-fatigued faculty, high staff turnover, and inadequate leadership.[44] But these internal conditions often have their roots outside the school, in regulation and government oversight. Many public schools are now products of multiple layers of regulations, half-implemented reform initiatives, and district-wide bargains among adults.[45] These structures promote isolation of parts of the school from one another, and their cumulative effect, when seen across a school, is fragmentation.

Many high schools have adapted to regulation in ways that make them less coherent and less productive. These adaptations involve administrative practices, habits, and attitudes. Many educators, both in the schools and in the universities that train them, have come to think that the ways things are done now are morally right and unchangeable, even if they compromise schools' effectiveness. Three kinds of external obstacles impede schools' ability to gain and maintain coherency:

- Structural features that make it difficult for schools to control their resources and activities.
- Political impediments that make it difficult for public schools to choose and hold to a consistent line of action.
- Attitudinal impediments that make it difficult for people who are accustomed to working in a public education environment to create coherence, even when they have the opportunity to do so (as in the case of site-based management or school system decentralization).

Chartering can allow particular schools to operate outside structural and political constraints, as can special policies like New York City's small high schools initiative. But these provide limited exceptions to the anti-coherency policies that affect most schools and require them to answer to many different masters.[46] Moreover, schools from all sectors may have to combat attitudinal challenges involved in establishing and changing mindsets. (For a detailed description of barriers in structural, political, and attitudinal domains, see Appendix A.)

REGULATIONS

State and federal policy sets conditions that enable but also constrain the establishment of an effective high school. For example, rigid seat-time requirements, the expectation that students be organized by grade levels, and time blocked into school years may act as barriers to innovation. Leaders of schools that use student-led structures, an interdisciplinary curriculum, or technology as

a substantial piece of their instructional model may find that what the school thinks is best for its students contradicts state regulations.

Rigid state testing structures may also stand in the way of engaging instruction. If students are required take end-of-course exams only after completing coursework, those who have quickly learned everything in a course are forced to stay longer than necessary. If students could test out when ready, they could go on to other subjects, and schools would have incentives to increase the options available. In addition, tests that are disconnected from course material may prompt teachers to "teach to the test," and cover topics in ways that teachers and students alike perceive to be irrelevant to rich or useful subject matter.

DISTRICT POLICIES

Even when district leaders wish for coherent schools, school board politics and the actions of central office bureaucracies can send mixed messages to schools and the broader community. Uncoordinated district demands can derail school development. Districts can encourage coherent schools and then pull the rug out from under them—changing the rules under which they operate, requiring them to operate programs that are not consistent with their core mission, constraining their use of funds or freedom to hire and assign teachers, assigning their key leadership teams to work elsewhere, eliminating choice-based admissions, or forcing them to move to different neighborhoods. This is particularly likely during school board or superintendent transitions. Districts can also impede the development and operation of coherent high schools by operating low-performing elementary and middle schools.[47]

Though high schools must prepare to socialize and help students who arrive with different levels of preparation, their goals become much more difficult to achieve if they take in many students who lack basic reading comprehension skills or are unable to apply fundamental math concepts like fractions, decimals, and rates. High schools that must re-teach these fundamentals have difficulty exposing all students to the same curriculum. Of the CMOs that are successfully serving high school students from low-income backgrounds, nearly all operate a feeder middle school or a 6–12 campus, which helps to ensure that most students are not abysmally far behind when they enter high school.[48] The same is true of many religious high schools. In an environment with a healthy selection of high-quality elementary schools this should not be necessary, but in many cities, high schools are left with few alternatives if they hope to get students meeting college-ready standards by the time they graduate. Districts looking to include coherent high schools should ensure that similarly coherent practices are prioritized in elementary and middle feeder schools.

School districts have tried to avoid the challenge of students entering high school with uneven levels of preparation by requiring all schools to use uniform methods and sequences of instruction. In cities, however, the diversity of student needs and motivations means that students will arrive at high school differently prepared, even if their schools all use the same methods and curriculum. There is no way for high schools to escape the need to assess students as they enter and identify those who need help meeting the prerequisites for high school work.

All students can benefit from rigorous student learning standards. Cities where parents can choose among diverse elementary and middle schools should strive to develop complementary high schools with instructional models that align with primary schools. Given students' diversity of needs, this is a more plausible approach to making a "coherent district" than requiring all schools to use the same methods. But experiences in district and parochial systems have shown that neither a universally mandated model nor alignment between primary and secondary schools can guarantee uniform and adequate preparation of students entering high school.

PRINCIPALS, TEACHERS, AND PARENTS

Many educators and parents have come to accept school incoherency as normal or inevitable. Building a pipeline of school leaders and teachers who agree on the importance of high academic expectations and a broader coherent school design is extremely difficult when teachers and leaders are assigned to schools on factors other than fit. The resistance of a few senior teachers to new ideas can have a strong impact on the culture of a school and on acceptance of reform from other teachers.[49]

Parental aspirations for high schools can also be barriers to coherency. One description of a modern high school states that the high school "tries to be all things for all people. It is a social center, an athletics hub, a counseling clinic, a health provider, a driver training institution, a job preparation site, a luncheonette, and, oh yes, an academic institution."[50] Parents and community members have come to expect a broad menu of offerings from high schools.

The removal of these constraints, however, is not enough. Not all schools advantaged by independent status and supportive policy environments are coherent. The track record of charter high schools is illustrative. Most charter schools operate without the impediments discussed in this section, but only a few are coherent and effective. A study of Florida and Chicago revealed that charter middle school students who attended charter high schools were more likely to graduate and enroll in college than those who transferred to a traditional public high school. But even so, only about 75 percent of these students graduated from high school and only about 50 percent went on to attend any higher education institution within five years.[51]

Policies and Investments that Favor Coherent Schools

The coherency principles provide a standard against which potential reforms of the public education system can be assessed. A strategy of promoting differentiation of schools so that each can be coherent in its own way requires public authorities to make educational decisions on a school-by-school basis, rather than making policies that apply to all schools, thus constraining many. In considering a particular school, officials need not ask whether a school concept is right for all the students in the locality, or whether some groups would dislike a particular school. All they need to ask is whether there is a demand for a particular school, if the school model is designed to prepare all students for post-secondary education, and whether the people proposing to run it have plausible credentials for doing so.

Schools need to start with high academic standards and clear ideas about how adults can help students achieve them. With those ideas established, a school can implement a focused and consistent approach to instruction if these conditions are in place:

- The school has the freedom to invest time and resources in learning how a particular approach to instruction is intended to work, and in adapting that approach to the school's own circumstances.
- Money comes to the school in a lump sum form so that leaders are not continually forced to add new programs and abandon old ones to meet funders' changing priorities.
- Principal and teacher leadership is stable so that a group of collaborators can stay together and learn together.
- Teachers and families who dislike a particular approach to instruction are free to choose another school rather than fight attempts to follow that approach.[52]

Accountability also matters. Leaders in schools where results are closely monitored, and that might be disbanded if the school can't show student benefits, have the leverage they need to motivate concerted teacher work.[53]

These conditions often do not apply in public education, especially in urban school systems where schools are required to accept teaching staff on the basis of seniority are susceptible to having principals and teachers abruptly reassigned by district higher-ups, families who are assigned to schools have great difficulty going elsewhere, and school leaders enjoy little freedom to reallocate funds and student and teacher time.[54] The lack of clear performance accountability further disables traditional school leadership.

WHAT KEY ACTORS CAN DO TO PROMOTE COHERENT SCHOOLS

No sure formula exists for creating and sustaining coherent schools. Even private school networks that have all the advantages of tradition, freedom of action, and teacher and family choice fail at times. However, coherent schools are not mysterious. There are actions school leaders and funders can take to promote and keep coherent schools; there are also actions district and state authorities can take for public schools.[55]

The core message is that once standards are set, coherent public schools need to be regulated as little as possible and overseen on the basis of performance, not on compliance with rules. School districts and state departments of education need to stop creating rules that make all schools operate alike and roll back older rules like seat-time requirements, school staffing tables, and teacher work rules. This means abandoning the hopeless effort to create exactly the right set of rules that will force all schools to be good. It also means expecting schools to be different, and assessing them only on results—whether students learn, graduate, and succeed at the next higher level of education.

WHAT DISTRICT AND STATE LEADERS CAN DO

State and local school boards now act as little legislatures, receiving demands from all parts of the community and finding ways to respond to all of them in some minimally acceptable way. Like all legislatures, school boards handle demands through the processes of compromise and horse-trading. When boards reach compromises among competing demands, they encode the results in rules of general applicability. The end result is to sustain what historian David Tyack calls fragmented centralization (i.e., the control of schools by multiple uncoordinated mandates and reporting requirements, not by comprehensive plans or designs).[56]

Commitment to a system of individually strong schools requires replacing bureaucratic micromanagement with a totally different supply process where individual schools are commissioned to provide particular approaches to education. Basic civil rights guarantees and employee protections would still apply to all schools, but a school would not be required to take actions incompatible with its mission or approach. For example, a school commissioned to provide bilingual instruction to immigrant children would not be required to offer the same courses to all native-born students. A school commissioned to provide a specific curriculum would not be required to change just because one parent complained it did not meet her child's needs. A group that desired a given curriculum might be able to obtain it for a particular school, but could not have it mandated for all schools sponsored by

> Once standards are set, coherent public schools need to be regulated as little as possible and overseen on the basis of performance, not on compliance with rules.

the same local school board. The only necessary consistency among models would be that schools prepare all their students for college and career.

Such diversity allows schools to focus on a defined mission and to differentiate their methods. If no single approach to schooling is universally required, there is no need to resolve differences through political means. Different tastes and preferences can find expression in different schools. Individual schools or small groups of schools can adopt and rigorously pursue different pedagogical theories.

Diversity of schools is not an end in itself, but an inevitable result of an attempt to support coherent schools that, as a group, meet the varying needs of students. Schools could differentiate themselves on the basis of curriculum, climate, or some other feature that could unify staff and inform parents about whether the school is likely to fit the family's preferences and meet their child's needs. Given the wide range of social, cultural, and language groups served by public education, schools will inevitably come to pursue different approaches.

School boards and superintendents can provide the freedoms schools need to become and stay coherent by making specific agreements with schools, or by adopting district-wide policies based on school autonomy and performance-based accountability.[57] Districts can promote coherency in schools by establishing explicit frameworks for school autonomy that are linked to accountability systems based on student gains in test scores, normal progress to graduation, graduation, and other authentic outcome measures. Chartering schools is one mechanism for matching autonomy, family choice, and performance accountability. Some localities also create autonomy policies that give district-operated schools charter-like freedoms.[58]

Schools also need stability in public accountability systems. Ambitious expectations (e.g., those set by the Common Core State Standards) are invaluable: coherency comes from a push for continuous improvement, not from self-satisfaction. School leaders and teachers, especially the large numbers educating students who enter high school lacking key skills, expect that the bar will be raised from time to time. However, abrupt changes in measurement or standards can throw any school into turmoil. Schools must have sufficient time to incorporate new expectations, and state and district leaders must promote ambitious student learning while avoiding setting hard targets that no one has previously met.

State leaders, both in the executive branch and legislature, can also promote coherency in schools. Their greatest leverage is over districts, ensuring that they can give schools needed autonomy and stabilize their funding and accountability. A new resource shows how state laws can be amended to enable district reforms in school oversight, accountability, funding, and student assignment that in turn can support coherent schools.[59] The implicit message is that states cannot create coherent schools by mandates on school practice or by increasing district intrusiveness.

WHAT FUNDERS (WHETHER GOVERNMENTS OR PHILANTHROPIES) CAN DO

New schools, even those built on a well-established model, need time to recruit staff and lay the groundwork for a common culture. It is possible but extremely challenging for teachers and school leaders to do this work while simultaneously serving students. For existing schools undergoing transformation, educators need at least a full calendar year to prepare. Salaries and other costs must come from places other than normal revenue; that's where funders come in.

Funders can pay for:

• Development of a school model to be used in one or many schools.
• Work on pre-opening activities in a particular school.

- Documentation and replication of a model that is working in one or more schools.
- Development of leadership incubation programs that enable future school administrators to learn deeply about how a school of a particular type operates.
- Placement of key staff from a stable school to a start-up, or to a school that is struggling to implement a particular model.[60]
- Sponsorship of competitions or processes to enable school development teams to design new coherent schools in a district.[61]

It probably costs less for a new school to adopt a known model with exemplars and good documentation than to develop one in the absence of such guidance. National religious school networks, like those operated by the Jesuits, can start new schools without major up-front investments because they can take advantage of large numbers of current and former teachers and school alumni.[62] In the public sector, such well-developed national networks are rare: the most prominent exemplars are CMOs. These have required a great deal of philanthropic funding, many in the tens of millions of dollars. For most, the cost of creating and scaling a CMO-based school model is far in excess of the federal support for start-up charter schools.

There is no reason why a large school district or a coalition of them could not create networks that, like the CMOs and religious schools, can reproduce high-quality schools. Philanthropies should continue to support successful CMOs and the development of new networks of coherent schools, whether chartered or district-affiliated. Some of these might find ways of using technology to enable functioning schools to support new ones.

Funders also need to adopt reasonable expectations about how long it can take a coherent school to develop, whether from scratch or transformation. The odds of a school showing dramatically superior results (compared to student baselines or schools serving similar students) in one to three years are low; first year results are more likely to be negative than positive. Foundation officers and boards need to seek advice about how long of a time horizon to adopt, and resist panic if mid-term results are less than inspiring. Funders can follow leading indicators—whether instructional practices are changing, whether teachers and parents are trying to join or escape the school— and might pull the plug on a school that is not developing quickly enough. But, with respect to supporting schools striving for coherency, informed patience and support, not panic, is the greater virtue.

How much money is enough to create a successful high school or transform an existing school? New charter schools can get as much as $250,000 in federal start-up money; that proves to be adequate for some but not for others. The results of the SIG grants, where few schools changed significantly despite federal grants averaging nearly $1 million, would suggest that no amount is enough to transform an existing school. Those results, however, reflect the SIG program's lack of pressure on schools and districts to make bold changes.

Clearly, funders can do a lot to help create and reproduce coherent schools. But the process is expensive, involves risks of failure, and takes time. Some philanthropies have given up too soon, or required school leaders to open new schools faster than they could develop knowledgeable staff and school cultures. Traditionally, organizations that open many schools have done so incrementally over decades and have relied heavily on "hiving," for example, sending a number of people from an operating school to lead the creation of a new one. These organizations recruit and train new people, but they invest much more than a few sessions of professional development.

Funders also need to critically consider whether the district in which a school operates will support or interfere with its development of coherence. Real agreements endorsed by the local school board—not simply agreed to in principle by an affable superintendent—are necessary. For schools

to develop and sustain their distinctive character, these arrangements must be stable. Though schools can't be completely insulated from the realities of budgets and facilities, their funding (based on enrollment and reflecting the district-wide average per-pupil expenditure) and location must not be changed capriciously. The Gates Foundation's mixed success in supporting new high schools illustrates this lesson: they had great success in New York City where governance reforms supported coherency, but experienced failure where districts and unions could intervene in schools at random.

Carnegie Corporation of New York, in its *Opportunity by Design* initiative, has done due diligence to seek out district governance and oversight environments that will support its new schools in achieving high standards for students who enter with skills gaps. Denver, New York City, Philadelphia, and Cleveland have all shown a sustained commitment to improving school autonomy, accountability, and capacity through the development of high-quality teacher and leadership pipelines. But none of these districts have done enough. Carnegie recognizes that to create the number of coherent high schools that students need, even these forward-thinking districts must adjust their policies and practices. Therefore, a central goal of the initiative is to provide districts with essential feedback about what barriers exist to establishing and maintaining a coherent high school.

Moving Public School Systems Forward to Support Coherency

The need—and the case—for coherent high schools is as strong as ever, especially in light of concerns that students are not graduating from high school college and career ready, and college completion rates remain a problem.[63] With recent work in charter schools and a few leading districts, and a renewed interest in deeper learning and character development, the numbers of such schools might be slowly increasing. But it is still clear that they are rare and hard to sustain, and that the normal state of affairs is quite different. It is easier and in some ways more natural for schools to be less closely integrated, for faculty members to create their own micro-cultures and routines in their classrooms, and for teenage students to be able to evade the most demanding courses and focus on matters that interest them at the time. It is also normal for parents to accept that schools demand little of their children, and yet fully expect those schools to prepare kids for college and career success.

To counter these natural tendencies, school leaders and public officials have to make strong cases for a different form of schooling and resist the compromises that prevent or erode coherent schools. As we have suggested, there are ways educators, philanthropists, and policymakers can promote coherent schooling. But these imply degrees of constancy and discipline that are not easy to maintain.

Appendix A: Impediments to Coherency

	Political	Structural	Attitudinal
School board actions	Requirement to comply with multiple, unrelated mandates	Habit of crisis intervention in schools that become controversial	Idea that every high school should reflect a uniform set of policies rather than a common commitment to postsecondary readiness
School funding	Central control of spending; lack of school control over professional development and curriculum investments	"Grantsmanship" system that requires a school to adopt a new program if it wants extra money	Idea that a good school is one that offers many separate program options
Teacher assignment	State formula controls number of teachers, administrators; union contracts put senior teachers in control of placement	School leaders expect union contract to control teacher work assignments	Idea that unity can come from staff deliberation, no need for prior clarity or staff selection
School leadership	Principals assigned and reassigned to meet district, not school, imperatives	Emphasis on "fairness" to adults, not school continuity	Idea that the principal is the agent of the Board and central office
Student assignment	Students assigned by residence, not parental preference	Effort to serve every need at least well enough so that no group complains strongly	Parents' acceptance of a school that supports student rites of passage (sports, activities, dances)
Source of the instructional program	Board policies and student demographics drive program placement	Requirements to label students and provide special programs as a matter of right for students with some labels, without regard to effectiveness	Idea that a good school is eclectic and teachers work best as independent specialists
Assessment and accountability	Emphasis on compliance, not student outcomes or family satisfaction	Requirement to keep all external constituencies quiescent, if not delighted	Idea that accountability should be based on compliance not school effectiveness

Endnotes

1.   James B. Conant, *The American High School Today* (New York, NY: McGraw-Hill Book Company, 1959).

2.   There is no single definition of a "small" high school. Though many proponents would cap school size at 300 or 450, some high schools considered small serve as many as 650 students. At this size, a "small" high school can serve as many students as some public comprehensive high schools. Perhaps the best definition comes from small schools movement founder Deborah Meier: "To create a staff-run school with high standards, the staff must know each other well, too, be familiar with each other's work, and know how the school operates." Deborah Meier, *The Power of Their Ideas: Lessons for America From a Small School in Harlem* (Boston, MA: Beacon Press, 1995). Via an informal conversation with Paul Hill, Meier expressed that a school must be small enough for all members of the faculty to know one another and to meet and hold discussions around one table. Of course, even the school size implied by that definition depends in part on factors other than the numbers of students served; for example, how long the school has been in operation, the stability of its staffing, the willingness of teachers to get to know one another, and the leader's ability to frame an agenda that all faculty members can discuss efficiently.

3.   Daniel Koretz, "What Happened to Test Scores, and Why?" *Educational Measurement: Issues and Practice*, Winter 1992, 7-11.

4.   James S. Coleman et al., *Parents, Teachers, and Children: Prospects for Choice in American Education* (San Francisco, CA: Institute for Contemporary Studies, 1977).

5.   Theodore R. Sizer, *Horace's Compromise: The Dilemma of the American High School* (New York, NY: Houghton Mifflin, 1984).

6.   Ernest L. Boyer, *High School: A Report on Secondary Education in America* (New York, NY: Harper Collins, 1985).

7.   E. D. Hirsch Jr., *Cultural Literacy, What Every American Needs to Know* (New York: NY: Houghton Mifflin, 1987).

8.   James S. Coleman, Thomas Hoffer, and Sally Kilgore, "Achievement and Segregation in Secondary Schools: A Further Look at Public and Private School Differences," *Sociology of Education* 55, no. 2 (1982): 162-18); James S. Coleman, Thomas Hoffer, and Sally Kilgore, *High School Achievement: Public, Catholic and Private Schools Compared* (New York, NY: Basic Books, 1982); James S. Coleman and Thomas Hoffer, *Public and Private High Schools: The Impact of Communities* (New York, NY: Basic Books, 1987).

9.   Arthur G. Powell, Eleanor Farrar, and David K. Cohen, *The Shopping Mall High School: Winners and Losers in the Educational Marketplace* (Boston, MA: Houghton-Mifflin, 1985).

10.   Jeannie Oakes, *Keeping Track: How Schools Structure Inequality* (New Haven, CT: Yale University, 1985).

11.   Gerald Grant, *The World We Created at Hamilton High* (Cambridge, MA: Harvard University Press, 1988).

12.   Paul T. Hill, Gail Foster, and Tamar Gendler, *High Schools with Character* (Santa Monica, CA: RAND Corporation, 1990); Anthony S. Bryk, Valerie Lee, and Peter Holland, *Catholic Schools and the Common Good* (Cambridge, MA: Harvard Press, 1993).

13.   Some schools are explicit about the desired attributes of graduates. Jesuit-run schools, for example, publish a profile of the graduate at graduation, "Open to Growth, Intellectually Competent, Religious, Loving and Committed to Doing Justice..." Jesuit Secondary Education Association, "JSEA Profile of the Graduate at Graduation," www.jsea.org.

14.   This is the meaning of a "centripetal curriculum, which pulls all students toward the common experience of challenging, interesting course work (Hill et al., *High Schools With Character*, 1990). For personal accounts of this phenomenon and its implications for students, see Jacqueline Irvine and Michele Foster, ed., *Growing Up African American in Catholic Schools* (New York, NY: Teachers College Press, 1996).

15.   For an earlier formulation with important points in common with this list, see New Visions for Public Schools, *Ten Principles of Effective School Design* (www.newvisions.org).

16.   Michele Cahill, "Youth Development and School Design." Carnegie Corporation of New York video, 41:08. December 3, 2013.

17.   Adriana Villavicencio and William H. Marinell, *Inside Success: Strategies of 25 Effective Small High Schools in NYC* (New York, NY: The Research Alliance for New York City Schools, 2014).

18. Diane Friedlaender et al., *Student-Centered Schools: Closing the Opportunity Gap* (Stanford, CA: Stanford Center for Opportunity Policy in Education, 2014); Linda Darling-Hammond, Jacqueline Ancess, and Susanna Wichterle Ort, "Reinventing High School: Outcomes of the Coalition Campus Schools Project," American Educational Research Association 39, no. 3 (Autumn 2002): 639-673; Joseph F. Murphy et al., The Productive High School: Creating Personalized Academic Communities (Thousand Oaks, CA: Corwin Press, Inc., 2001).

19. Villavicencio and Marinell, *Inside Success*; Nettie Letgers, Robert Balfanz, James McPartland, *Solutions for Failing High Schools: Converging Missions and Promising Models* (Baltimore, MD: Center for Social Organization of Schools, John Hopkins University, 2002); Valerie E. Lee and David T. Burkam, "Dropping Out of High School: The Role of School Organization and Structure," *American Educational Research Journal* 40, no. 2 (Summer 2003): 353-93.

20. Elaine M. Allensworth and John Q. Easton, *What Matters for Staying On-Track and Graduating in Chicago Public High Schools: A Close Look at Course Grades, Failures, and Attendance in Freshman Year* (Chicago, IL: Consortium on Chicago School Research at the University of Chicago, 2007); Friedlaender et al., *Student-Centered Schools*; Letgers et al., *Solutions for Failing High Schools.*

21. Friedlaender et al., *Student-Centered Schools.*

22. Letgers et al., *Solutions for Failing High Schools.*

23. Allensworth and Easton, *What Matters for Staying On-Track and Graduating*; Villavicencio and Marinell, *Inside Success*; Darling-Hammond et al., "Reinventing High School;" Letgers et al., *Solutions for Failing High Schools.*

24. Villavicencio and Marinell, Inside Success; Friedlaender et al., *Student-Centered Schools*; Letgers et al., *Solutions for Failing High Schools*; Corinne M. Herlihy and Janet Quint, *Emerging Evidence on Improving High School Achievement and Graduation Rates: The Effects of Four Popular Improvement Programs* (Washington, DC: National High School Center, 2006); Allensworth and Easton, *What Matters for Staying On-Track and Graduating;* Murphy et al., *The Productive High School.*

25. See especially Fred M. Newmann and Gary G. Wehlage, *Successful School Restructuring: A Report to the Public and Educators* (Madison, WI: Center on Organization and Restructuring of Schools, 1996).

26. W. David Stevens et al., *Lessons from High-Performing Small High Schools in Chicago* (Chicago, IL: Consortium on Chicago Schools Research, 2008).

27. Mark Berends, Susan Bodilly, and Sheila Nataraj Kirby, *Facing the Challenges of Whole-School Reform: New American Schools After a Decade* (Santa Monica, CA: RAND Corporation, 2002).

28. Brian Rowan et al., "School Improvement by Design: Lessons from a Study of Comprehensive School Reform Programs," chap. 49 in *The Handbook of Education Policy Research*, ed. Gary Sykes, Barbara Schneider, David M. Planck (New York, NY: Routledge, 2009).

29. David Cohen et al., *Improvement by Design: The Promise of Better Schools* (Chicago, IL: University of Chicago Press, 2014); Berends et al., Facing the Challenges of Whole-School Reform.

30. Becky Smerdon and Barbara Means, *Evaluation of the Bill & Melinda Gates Foundation's High School Grants Initiative: 2001-2005, Final Report* (Washington, DC: American Institutes for Research / Menlo Park, CA: SRI International, 2005), 3.

31. Sarah Yatsko et al., *Tinkering Toward Transformation: A Look at Federal School Improvement Grant Implementation* (Seattle, WA: Center on Reinventing Public Education, 2012).

32. Ibid.

33. For an excellent journalistic account of the new schools development process, see Thomas Toch, "Divide and Conquer, How Breaking Up Small Schools Can Be the Key to Education Reform," *Washington Monthly*, May 2003.

34. New Visions for Public Schools, *New Century High Schools and the Small Schools Movement in New York City, Interim Report Card* (New York, NY: New Visions for Public Schools, 2010).

35. Howard Bloom and Rebecca Unterman, *Sustained Positive Effects on Graduation Rates Produced by New York City's Small Public High Schools of Choice* (New York, NY: MDRC, 2012);

36. Howard Bloom and Rebecca Unterman, *Sustained Progress: New Findings About the Effectiveness and Operation of Small Public High Schools of Choice in New York City* (New York, NY: MDRC, 2013).

37. James L. Woodworth and Margaret E. Raymond, *Charter School Growth and Replication, Volume II* (Stanford, CA: Center for Research on Education Outcomes, 2013).

38. Joshua Furgeson et al., *Charter School Management Organizations: Diverse Strategies and Diverse Student Impacts* (Cambridge, MA: Mathematica / Seattle, WA: Center on Reinventing Public Education, 2012), 44.

39. For one example, see KIPP "character report card," which resulted from KIPP leaders' collaboration with psychologists Martin Seligman, Chris Peterson, and Angela Duckworth.

40. Christi Chadwick and Julie Kowal, *Preparing for Growth: Human Capital Innovations in Charter Public Schools* (Washington, DC: Center for American Progress, 2011).

41. Shear et al., "Contrasting Paths to Small-School Reform: Results of a 5-year Evaluation of the Bill & Melinda Gates Foundation's National High Schools Initiative," *Teachers College Record* 110, no. 9 (2008): 2024.

42. Shear, et al., "Contrasting Paths to Small-School Reform;" Robin Lake, B. Dusseault, and C. Eide, "Turnaround Models in New Orleans: Initial Findings From a Study of the Recovery School District" (presentation, American Education Research Association annual meeting, 2012).

43. Emily Ayscue Hassel and Bryan Hassel, "The Big U-Turn," *Education Next* 9, no. 1 (Winter 2009): 22.

44. Mass Insight Education & Research Institute, *The Turnaround Challenge: Why America's best opportunity to dramatically improve student achievement lies in our worst-performing schools* (Boston, MA: Mass Insight, 2010).

45. For a discussion of how the structure of regulations and past bargains divides and constrains schools, see Paul T. Hill, Lawrence Pierce, and James Guthrie, *Reinventing Public Education*: *How Contracting can Transform America's Schools* (Chicago, IL: University of Chicago Press, 1997), chap. 2 and 3.

46. See, for example, Bruce Bimber, *The Decentralization Mirage* (Santa Monica CA: RAND Corporation, 1993).

47. Betsy Doyle and Nithin Iyengar, *Rethinking High School Turnarounds* (San Francisco, CA: The Bridgespan Group, 2013).

48. These CMOs include, but are not limited to, YES Prep, Mastery Prep, Aspire Public Schools, Alliance College-Ready Public Schools, and several KIPP regions.

49. For example, one study of the integration of technology into high school math classrooms found that novice teachers shied away from technology integration due to a perception that a few veteran teachers were opposed to the practices. See Orit Hazzan, "Prospective High School Mathematics Teachers' Attitudes Toward Integrating Computers in Their Future Teaching," *Journal of Research on Technology in Education* 35, no. 2 (2002): 213-225.

50. Judy B. Codding and Robert Rotherman, "Just Passing Through: The Life of an American High School," in *The New American High School,* ed. David D. Marsh and Judy B. Codding (Thousand Oaks, CA: Corwin Press, 1999): 11

51. Ron Zimmer et al., *Charter Schools in Eight States: Effects on Achievement, Attainment, Integration, and Competition* (Santa Monica, CA: RAND Corporation, 2009): 58; this study examines high schools in Florida and Chicago.

52. Another formulation of the last point is that staff must all agree before a design can be rigorously implemented. Because unanimous agreement is extremely difficult to attain in organizations, such a precondition would automatically limit the use of designs to a very small number of schools.

53. Paul T. Hill and Robin J. Lake, *Charter Schools and Accountability in Public Education* (Washington, DC: Brookings Institution Press, 2002).

54. Donna E. Muncey and Patrick J. McQuillan, *Reform and Resistance in Schools and Classrooms: An Ethnographic View of the Coalition of Essential Schools* (New Haven, CT: Yale University Press, 1996); Seymour B. Sarason, *The Predictable Failure of Educational Reform: Can We Change Course Before It's Too Late?* (San Francisco, CA: Jossey-Bass, Inc., Publishers, 1990); Bimber, *The Decentralization Mirage*; Paul T. Hill et al., *High Schools with Character.*

55. Elsewhere we have suggested a comprehensive change in governance that would minimize regulation but promote school differentiation and strengthen government's ability to protect children at risk from ineffective schools. See Paul T. Hill and Ashley E. Jochim, *A Democratic Constitution for Public Education* (Chicago, IL: University of Chicago Press, 2014.)

56. David Tyack, ""Restructuring" in Historical Perspective: Tinkering toward Utopia," *Teachers College Record* 92,

no. 2 (Winter 1990): 170-191.

57. Hill and Jochim, *A Democratic Constitution*; Paul T. Hill, Christine Campbell, and Betheny Gross, *Strife and Progress: Portfolio Strategies for Managing Urban Schools* (Washington DC: Brookings Press, 2012). The authors outline the following components that enable the establishment and sustainment of coherent schools: good options and choice for all families, school autonomy, pupil-based funding for all schools, a talent-seeking strategy that creates pipelines of high-quality teachers and leaders, sources of support for schools that extend beyond district services, performance-based accountability for schools, and extensive public engagement strategies.

58. Paul T. Hill, *Defining and Organizing for School Autonomy* (Seattle, WA: Center on Reinventing Public Education, 2013).

59. Kelly Hupfeld, A State Legal Framework for Portfolio Districts, Working Paper (Seattle, WA: Center on Reinventing Public Education, December 2014). For information on this working paper, please email CRPE's policy director, Jordan Posamentier.

60. Transferring select teachers and administrators from a successful school to a new or weak school can be an effective strategy for scaling successes. But leaders using this approach must be careful not to strip schools of a strong leader when the school has little other capacity. Doing so has led to the downfall of many schools.

61. One promising initiative is the Carnegie Corporation's Opportunity By Design Initiative, now operating in Denver, Cleveland, Philadelphia, New York City, Providence, and Prince George County, Maryland: see Leah Hamilton and Anne Mackinnon, *Opportunity by Design, New High School Models for Student Success* (New York, NY: Carnegie Corporation of New York, 2013).

62. Paul T. Hill and Mary Beth Celio, "Catholic Schools," in *City Schools: Lessons from New York*, ed. Diane Ravitch and Joseph Viteritti (Baltimore, MD: Johns Hopkins Press, 2000), 237-269.

63. Mark Schneider and Lu Yin, *The High Cost of Low Graduation Rates: How Much Does Dropping Out of College Really Cost?* (Washington, DC: American Institutes of Research, 2011).