



The Numbers We Need: How the Right Metrics Could Improve K–12 Education

By Frederick M. Hess and Jon Fullerton

Educators lack the data necessary to pinpoint concerns and successes in schools. A focus on collecting student achievement data in the past ten years has increased the amount of information school districts have, but these data are insufficient. Successful organizations use extensive data analysis to guide decisions, but few K–12 districts have the metrics needed to do the same. This Outlook outlines several steps that, if implemented, could make data-driven management in education a reality and lays out key measurements districts should collect to make data analysis an effective tool for improving education.

Successful organizations, public and private, monitor their operations extensively and intensively. UPS and FedEx know where every package is in transit. Dell is famous for running an extremely tight supply chain, pushing the cost of holding inventory onto its suppliers by having a crystal clear understanding of its immediate requirements and only ordering what it needs when it needs it. Baseball teams employ sophisticated statistical analyses in making personnel decisions. Yet, in K–12 schooling, few districts understand their true costs of recruiting a new teacher, can determine whether one professional developer is more cost-effective than another, or can reliably assess the efficacy of particular programs or staff.

One consequence is that school systems focus single-mindedly on the few metrics they do have, such as test scores and expenditures. Even districts that tout themselves as “data-driven” often mean only that they can break test scores down by

teacher, subject, or student population; few have reliable information on how satisfied principals are with the support provided by human resources (HR) or how rapidly the information technology (IT) team addresses instructional requests.

While student achievement data are the single most important metric schools can collect, districts also need reliable measures that illuminate performance in areas like HR, procurement, and data management. Tracking the appropriate indicators can put system leaders in a position to revolutionize how schools work, how educators are supported, and how dollars are spent.

Key points in this Outlook:

- Successful organizations rely extensively on data analysis, but few K–12 districts have the metrics they need to do the same.
- If implemented, six key steps outlined in this Outlook could help make data-driven management in education a reality.
- Data can be used to foster improvements in education, but districts need to collect the right numbers and to conduct quick and effective analyses.

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Why Achievement Data Are Not Enough

Over the past ten years, there has been a concerted push to hold schools accountable for their results by looking principally at student achievement data. Accountability efforts—and particularly the eight-hundred-pound gorilla of No Child Left Behind–style testing—have pushed districts to collect more of these data than ever before, and states and districts are increasingly willing to hold schools accountable for results. Many think we are on the verge of a management revolution in using data to drive achievement.

There are problems, however, with using data collected for external accountability (measurement *of* performance) to assess internal management (measurement *for* performance). The data most useful to parents and policymakers are often simple, straightforward data on assessment results and graduation rates, whereas the key data for district officials shed light inside the “black box” of the school and district—illuminating *why* those results look like they do and what might be done about them. This is why the public financial reports by corporations like General Electric or Google look very different from the measures managers use when seeking to improve operations or practices.

Beyond the usual litany of concerns about existing assessments, there are fundamental problems with relying too completely on achievement measures. For one, they are largely irrelevant to motivating and managing many important employees. Does it really make sense to imply that we are holding a payroll processor responsible for reading results? Would we not rather hold her responsible for the speed and accuracy of her work? Or for the percentage of principals and teachers who rate the payroll office’s service as courteous and attentive? By focusing so relentlessly on student achievement, especially in just a few domains, many employees (including teachers in untested subjects) are either excused from results-driven accountability or held accountable for things over which they have little control.

In addition, it is easy to give short shrift to the operations, hiring, and financial practices that support educators in schools and classrooms. Operations are like the air we breathe in that we scarcely notice them until something goes awry. Focusing on instructional leadership is difficult when the hiring process assigns instructors to schools with little time to prepare for the new academic year, when texts and supplies are not delivered to schools, and when teachers must wait weeks or months for assessment results.

Finally, student achievement data alone will not allow organizations to *diagnose* problems and *manage* improvement. If math scores are disappointing, why is that? Is professional development the problem? Is hiring? It is as if a chief executive officer’s management dashboard consisted of one item—the stock price. In fact, given the state of most student achievement data systems, the better analogy is to *last year’s* stock price.

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Ultimately, education leaders should take a page from the “balanced scorecard” approach that has reshaped how private- and public-sector firms have approached data and management.¹ Developed in the early 1990s by Robert S. Kaplan and David P. Norton, the balanced scorecard provides a quick but comprehensive view of performance. It includes standard financial metrics that reflect past and current success but, crucially, complements these with metrics on customer satisfaction, internal processes, and the organization’s learning and innovation capabilities—the key predictors of future success.

Relying solely on financial metrics had too often led to an emphasis on measuring short-term financial gains, causing firms to sacrifice long-term viability in favor of short-term numbers. Well-designed, balanced scorecards develop a clear link between operational metrics and the bottom line. Ideally, they bring together, in a single management tool, many ostensibly disparate concerns, such as improving customer relations, boosting product quality, investing in research and development, and developing employees.²

Making Data-Driven Management a Reality

Today, even school districts routinely heralded as data-driven have rarely invested in the technology; hired the personnel; or developed the requisite expectations, feedback loops, analytic competencies, and accountability processes necessary for breakthrough management. Consequently, today many schools and systems are at the edge of their capacities when they seek to produce achievement data in a timely fashion.

This is a problem. We do not term a hospital “well-run” because its doctors use diagnostic tools. We would instead reserve that label for hospitals where staff were competent and efficient, supplies were carefully tracked and promptly refilled, data files were up-to-date, personnel needs were quickly handled, and so forth. Yet, in schooling, systems that have embraced only the most basic tenets of professional practice are deemed paragons of modern management.

What would it take for systems to start collecting data for breakthrough management? There are six steps. They form a rough hierarchy, so we will start with the most essential.

Step One: Accurate Collection of Basic Student, Financial, and HR Data. The first step for any organization is to collect the most fundamental data on what it does and how it spends its money. School systems are generally pretty good at this. Federal law now requires systems to test students and collect basic achievement data, while financial management requires districts to track spending, enrollment, attendance, and payroll.

Step Two: Data Linked across Time. Once districts have the initial building blocks, the key is to link them across time in order to determine how to improve performance. In general, a district that can collect its basic data accurately can also link them longitudinally. There are significant exceptions, however. Some systems do not maintain consistent identifiers across years for students or employees. One common problem is that organizational change is not accounted for in financial coding systems. Districts may assign costs only to offices (such as the Office of Instruction) and not functions (such as math professional development). The result is that when a district reshuffles its organizational chart, it cannot make comparisons over time.

Step Three: Customer Service and Satisfaction Data. Every company knows that its existence depends upon the satisfaction of its customers, and great companies measure customer service from several sources (internal and external) to diagnose potential problems quickly. Making such data managerially useful requires not just collection, but also ensuring that the data are routinely and systematically mapped onto processes and programs and analyzed.

Step Four: Data with Sufficient Granularity to Illuminate Units and Activities within Departments. Measuring

efficiency and effectiveness requires measuring outputs and processes in units that are often overlooked. In regard to the role of HR, various measures might signal opportunities for improved productivity. Such measures might assess how long it takes an HR department to vet, interview, and hire or reject an applicant; how HR managers apportion their time; or the resulting quality and quantity of applicants. Typically, systems will know how much is spent on HR and the number of staff but not how much time the HR staff spends on recruitment or responding to the needs of teachers.

Step Five: Data Connected across Content Areas (and to Outcomes). Even if the efficiency of HR processes has improved and vacancies are filled more rapidly, more is needed to judge effectiveness. For instance, do the new teachers achieve better or worse student outcomes than the teachers that came before them? Do they stay longer? Answering these questions requires connecting the HR system data to student-level longitudinal test data to retention data to survey data. This level of data sophistication makes activity-based costing and cost-benefit analysis possible.

Step Six: Doing the Above in Real Time. Ideally, district management should be able to find out instantly which schools are waiting for textbooks or which teachers have received what professional development. Collecting and connecting these kinds of data allows school system leaders to determine which programs are cost-effective, how their system compares to others on a range of activities, and where they need to improve. Few or no school systems have all of these elements in place today. Most are currently at step two. Consultants or internal district analysts can—with enough time, manpower, and supplemental data collection—provide school systems with analyses that may push to steps four and five—usually on a project basis. Getting to step six is a whole new ballgame.

The Numbers We Need

So what kinds of data should systems report on a balanced scorecard? We identify six essential domains. Unfortunately, even those that have been an ostensible priority have been shortchanged by a focus on what elected officials demand rather than on what will help leaders improve schools.

Domain One: Tracking Student Outcomes. The most important measures are those tracking student outcomes. Just a decade ago, most districts had abysmal systems for tracking achievement and school completion. Today, most can provide coherent data on how well students are doing on state assessments, but outcome metrics beyond state assessments can be difficult to come by. Key data include:

- Performance of students on various substrands (for example, number sense or spatial relations on the math test) of state tests with results accessible to the classroom teacher.
- Item-level analysis at the individual student and classroom level. This allows teachers to analyze whether all or most of their students miss the same test items, and then to adjust their teaching strategies.
- Employment or enrollment status of students after high school.

Domain Two: Tracking Students, Staff, and Inventory. Monitoring the number of students and teachers, facilities, and district assets provides important operational base lines. Systems have historically been good at tracking these kinds of data, largely because state and federal requirements led districts to configure their data systems accordingly. Unfortunately, there has been less success ensuring that these data are captured with sufficiently useful granularity or are matched with expenditures, programs, and outcomes. Key elements would include:

- Authorized staff positions, the location of the positions, the purpose and reporting relationships of the positions, whether they are filled and by whom, and whether they are full or part time.
- District assets and materials, where they are located, and the transfer of assets between locations (for example, the delivery of textbooks).
- Students, which schools and classrooms they attend, and the teachers and staff in those classrooms. This should include not just the “teacher of record” for the students, but also aides, tutors, and other staff working with the students.

Domain Three: Finance. This is another case in which systems routinely track transactions but few have invested in tracking expenditures in ways that permit their impact to be assessed clearly. A management-friendly system for tracking expenditures would link dollars with programs, actual employee time, activities, and students. If a professional development coach or a gifted-and-talented teacher works at multiple locations, this should be readily trackable and linked to the teachers or students in question so cost-effectiveness can be assessed. Key questions rarely addressed well include:

- Are dollars being spent in specific schools and classrooms or are they being spent by a central administration and then “allocated” to school sites based on calculations and projections?
- Who decides which expenditures to make, and for whom does the expenditure take place? For instance, is a school-based professional development program purchased by the central office or by an individual principal?

Domain Four: Instructional and Curricular Operations. Instructional and curricular operations have received heightened attention as a focus on instructional leadership has led district leaders to devote more time to providing professional development and related resources. Nonetheless, there are few districts that collect and track instructional and curricular services in a manner that informs judgments about program efficacy and efficiency. Most tracking does not permit leaders to identify particularly effective tactics or personnel, or opportunities for cost savings. Key data should include:

- What professional development is delivered to which personnel, when, for what length of time, and by whom.
- What tutoring or afterschool programs are delivered to which students, when, for what length of time, and by whom.
- Which reading programs and which math programs are used by which schools and how well they are implemented, at what cost, and with what results.

Domain Five: Human Capital Operations. More crucial than any other element of school-system management

may be human capital operations. Dramatically improving the quality of teaching requires that a system be able to monitor personnel; gauge performance; and competently manage hiring, transfers, benefits, employee concerns, and termination. The key is to develop metrics that reflect meaningful organizational performance, such as:

- The quantity of applicants for positions, how rapidly they are screened, and the rapidity with which successful applicants are placed and prepared.
- The satisfaction of employees with the support and responsiveness of HR to various concerns.
- The performance of personnel on various relevant metrics beyond student achievement (such as soliciting performance rankings of teachers by their principals and of other employees by their managers).

Domain Six: System Operation. Finally, it is essential to monitor business practices that facilitate system operation, such as procurement, IT, data management, and maintenance. The functioning of these elements is crucial to support school leaders, classroom educators, and school communities effectively. The key, again, is to measure these services not in terms of inputs but in terms of core metrics that accurately reflect performance. Key metrics would include:

- How long it takes the district to process a supply request, how rapidly supplies are delivered to the classroom, and how the system's cost per order compares to benchmarks.
- How rapidly school personnel are able to access the results of formative assessments, how satisfied they are with the user-friendliness of the data interface, and how intensively and extensively faculty make use of formative assessments and student data.

The Power of Data

Successfully collecting, maintaining, and employing these kinds of information will permit district and school leaders to manage in profoundly different ways by helping enable professionals to use their skills fully; eliminating unnecessary or redundant tasks, programs, and personnel; and targeting resources where they are needed most.

How does this work? Consider the remarkable success New York City and other cities enjoyed using new data tools to combat crime in the 1990s. The New York Police Department's (NYPD) Compstat system (short for computer statistics) compiled data from street police reports, crime complaints, arrest and summons activities, crime patterns, and police activities and used this information to help target patrols. Over time, the system was broadened to include 734 categories of concern, including the incidence of loud parties.³ Compstat made it easier to hold officers accountable, pinpoint areas of concern, and provide real-time data to both officers and street cops. Precincts were required to update crime statistics on a daily or weekly basis, rather than on the monthly or quarterly basis that had been the norm. New mapping software allowed officials to identify crime clusters by neighborhood, correlating them with drug-sale sites and addresses of known felons, and to communicate all this information department-wide within seconds. In the first five years after the 1993 introduction of Compstat, the number of homicides in New York City fell from 1,946 to 629—a rate of decrease three times that of the nation as a whole. Los Angeles, New Orleans, Albuquerque, Sacramento, and Omaha had similar results.⁴

As school districts collect more and better outcome and process data, they gain the ability to benchmark their operations and performance against one another. This would allow a superintendent and board to determine whether the amount of time it took to fill teaching positions or deliver textbooks was shorter, similar to, or longer than in other districts and to identify opportunities for improvement more rapidly.

The Council of Great City Schools has launched a comprehensive benchmarking process for the core business operations of districts, comparing districts across metrics such as transportation costs per student, food services participation rates, and lead time required for procurement.⁵ One benefit of such processes is that they give managers new urgency to ensure that data are accurate. Today, a lot of bad data are stored and analyzed because middle managers do not use the data and are not held accountable for ensuring their accuracy. Once data are put to work, schools and officials have far more cause to care that the numbers can be trusted.⁶

What Is the Problem?

This all seems pretty obvious; indeed, it is the way almost any large, well-functioning organization operates

in the twenty-first century. Why, then, is the collection and analysis of basic student achievement data and little else regarded as the cutting edge when it comes to schooling? Several political and organizational tensions explain this state of affairs.

First, and most significantly, our school systems do not reward education leaders for pursuing new efficiencies, redeploying resources, or coming up with innovative delivery mechanisms for school services. Indeed, superintendents who seek to eliminate redundant personnel or ineffective programs can expect to ignite conflict. Meanwhile, leaders can rarely expect to reap accolades or monetary or professional rewards for those decisions, while they may suffer severe professional penalties. School leadership is a delicate field, one in which a reputation for consensus building and peace-making is a treasured asset. As long as the aggressive use of management data is not rewarded, there is little mystery as to why they are rarely collected or employed.

Similarly, because statutes, salary structures, and existing commitments mean district and school officials have a limited ability to redeploy resources, they do not have much incentive to collect data whose value is primarily their ability to steer such decisions. The result is a chicken-and-egg situation, in which districts do not assemble data they cannot really use, and in which the resulting data vacuum makes it more difficult to make the case for new flexibility or argue that it will be used in informed and sensible ways.

Second, public education has underinvested in its IT infrastructure for years. The problem is that updating IT infrastructures is expensive in the short run in both dollars and political capital. When faced with the choice between spending millions on IT or directing that money into the classroom, few superintendents are eager to defend putting dollars into data systems rather than class-size reduction or salaries. In the private sector, management can more readily justify such investments by pointing to the bottom line—this approach, even when compelling, is harder for education leaders.

Moreover, as implementations of new payroll and planning systems in Chicago and Los Angeles show, there are undeniable risks to major upgrades in such systems. Installing a new financial or HR system can be a massive undertaking. Even when successful, the design and implementation process means that benefits will emerge only after several years, while the headaches and costs are immediate. Moreover, if not managed carefully, new systems can prove disastrous, especially given limited

expertise among district personnel. Los Angeles spent over a year sorting out problems due to its new integrated financial and business operations system. The United Teachers of Los Angeles established an RV camp outside district headquarters to highlight teacher payroll errors.

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Third, while data-driven instruction has become a popular buzzword, the cultures of school districts are not data-driven. State and local officials who have spent decades under the sway of familiar systems are significant obstacles to more fundamental change. Only in the past five or six years have many superintendents, central staff, principals, and teachers accepted the principle that pupil achievement data should be a central element of the school culture. Principal preparation continues to devote scant attention to data-related questions.⁷ There has been little exposure to fact-based decision making inside many school systems, and, given career paths in which few educators have the opportunity to see how management is practiced beyond K–12 schooling, there is often limited familiarity with how data can be collected or employed more aggressively. This helps foster a strong bias for “inside-the-classroom” metrics rather than measures of organizational performance.

Fourth, districts have done poorly at developing and rewarding the behaviors and skills required to collect, analyze, and report information. Even when potentially useful data exist, there has to be internal capacity to examine, use, and probe them. Few districts have such capacity. While a small team of skilled and thoughtful analysts could help a district improve operations dramatically by putting appropriate metrics into place, identifying inefficiencies, and so forth, such analysts tend not to have a natural client base besides overburdened superintendents. Such analysts are, however, likely to have ready-made opponents among those whose inefficiencies are exposed. Thus, when push comes to shove, the analysts find themselves on the outside looking in.

Finally, the current focus on data-driven decision making, because it concentrates on pupil achievement and school performance, has districts starting at what may be the most difficult entry point. Reaching reliable inferences about what drives student achievement can be difficult

even in the best of circumstances. Tackling this with imperfect data, under conditions fraught with potential bias and measurement error, and in a highly visible environment, is daunting. While districts are busy seeking to isolate best practices, they are neglecting low-hanging fruit in the operational areas. In areas such as HR, data management, and professional development, there is a wealth of experience from other organizations outside education that could be used to help measure, monitor, and benchmark performance. Ironically, by focusing on these areas of operational concern, districts might be able to demonstrate the power of data more readily.

In the end, no student of schooling will be surprised that political pressures can trump good management practice. On issues like teacher performance or school-system procurement, there are sometimes constituencies who simply do not want certain information gathered. There are no easy answers to such challenges—indeed, collecting and using data can be as much a political challenge as a technical one. That said, the success of some public-sector enterprises in employing operational performance data gives cause for optimism. In cases such as the U.S. Post Office or municipal policing, public pressure, persistence, and a commitment to rewarding reform-minded leaders have made a difference even in the face of entrenched constituencies and bulky bureaucracies.

What to Do?

These obstacles suggest just how difficult it will be even for those states, systems, and schools that have already embraced student testing to become truly data-driven organizations. Because what we are talking about is management data, the challenge is not primarily one for federal officials or state bureaucracies, except as agents to encourage, facilitate, and support system efforts. It is primarily a challenge for districts. Given that, we see at least five takeaways for educators, reformers, and policymakers.

One: Create Opportunities and Change the Incentives.

There is little incentive for school systems to collect the data essential for transformative management. The first step in convincing education leaders to embrace data-based management is to allow them to actually manage. This means unwinding the webs of input-based policies and regulations governing staffing formulas, class size, service delivery, and procurement and permitting systems to devise and deploy their own ways of doing business. To do this, state legislatures, state boards, and school boards need

to find new ways to evaluate systems that depend more upon various outcome metrics and less upon procedures.

Two: Get Started. Much of the data needed to measure and manage performance are collected already. It may not come in convenient, automated reports, and the data sources may not “talk” to each other, but the data are there waiting to be assembled by a skillful analyst. The key to the NYPD’s Compstat model was not a new IT system but the decision to assemble and use extant crime data to guide management and the practice of holding police captains accountable for improving results. Implementing such “stat” processes can happen right now. (In fact, it is happening in places like Baltimore, Maryland; Washington, D.C.; Paterson, New Jersey;⁸ and Chicago, Illinois.) Most important is not a new computer system but a focus on outcomes, analysis, and the requisite political will and organizational skill. In fact, if districts approach revamping their IT systems primarily as a technical exercise, district leaders will not get the numbers they need but the numbers IT thinks they need. A shiny new IT system will not fix a broken human system.

Three: Got Money? Got Talent? District leaders looking to assemble the appropriate data for active performance management face two immediate challenges. First, collecting and connecting the existing data is a labor-intensive process. Second, even once the data are assembled, there is a need for skillful analysis. While investing in performance measurement and management should ultimately save districts money, any serious move toward performance management will require more research and analytic capacity, a move that is tough to advocate when everyone wants to push dollars to the classroom. Private foundations are well equipped to help by providing start-up funding, tools, and technical assistance needed to launch performance-management processes and to identify talent from nontraditional pools that can help districts get performance management off the ground. One promising source of candidates, for instance, is the Broad Foundation’s resident fellows program, which recruits graduates from top business and policy schools with an eye to proven business leadership experience.

Four: The State Role. States can enable districts to pursue appropriate management data as they drive districts’ core operational, financial, and student reporting requirements. If a state designs these requirements to capture financial data in a managerially useful way, then districts

can compare and benchmark their costs (say, for professional development) against one another. States can facilitate this process by creating a forum for districts—all obviously using a common assessment and standard state protocols—to meet regularly, share metrics, compare data, and benchmark processes and results against one another. Moreover, just like districts, state education agencies collect mountains of data for reporting purposes. Too often, this transfer of data is a one-way street. States should feed these data back to school districts with comparative metrics. One terrific example is provided by the Los Angeles County Office of Education (LACOE). Los Angeles's eighty school districts are required by law to report financial performance, revenues, and expenses to LACOE annually. Rather than sit on this information, LACOE produces a report providing comparative per-pupil data for all eighty districts on each measure, enabling any district to benchmark itself against its neighbors.⁹

Five: Supporting Management Change. Finally, advocacy groups, business leaders, local media, mayors, and even governors can give district managers the political cover and support they need to move forward on performance management. Rather than highlighting only poor performance on the part of school operations, business leaders need to offer assistance in measuring and tracking organizational performance and to highlight the gains made in these areas as they occur. Outside advocacy groups can help the public draw connections between seemingly nonacademic management issues and student achievement. One compelling example has been the New Teacher Project's work on district hiring in New York City, where collecting and reporting data on teacher hiring and transfers fostered awareness of an overlooked issue and led to changes in the collective bargaining agreement and district behavior. When local management lacks the know-how or grit to launch such efforts, external reformers can get the ball rolling.

Final Thoughts

Some might wonder whether it is realistic to expect district leaders to embrace the sustained management project sketched here. Indeed, *Spinning Wheels* noted a decade ago that superintendents have historically had incentives to favor fast and furious change rather than slow, incremental reforms.¹⁰ However, superintendents historically enacted one short-lived reform after another because they operated in an environment in which it was hard to measure

outcomes because time was short. As a result, it was paramount to appear to be “doing something.” This pressure can be alleviated if superintendents are accountable for measurable improvements in the near term. By demonstrating progress in attracting quality educators, addressing needs, and wringing out inefficiencies, superintendents can win time to bring longer-term strategies to fruition.

Promising developments are underway. District leaders in places like New York City and Washington, D.C., and charter school systems like Edison Schools and KIPP have made operational data a priority. Collaborative efforts like the Schools Interoperability Framework and vendors like SchoolNet, Wireless Generation, and S&P have brought a new level of sophistication to collecting data for management rather than reporting purposes. Nevertheless, if schooling is to enter an era in which data are truly tools of breakthrough management, the real work lies ahead.

Notes

1. For perhaps the seminal explication of the “balanced scorecard,” see Robert S. Kaplan and David P. Norton, *The Balanced Scorecard: Translating Strategy into Action* (Boston, MA: Harvard Business School Press, 1996).
2. Robert S. Kaplan, “The Balanced Scorecard—Measures That Drive Performance,” *Harvard Business Review* (January–February 1992).
3. David C. Anderson, *Crime Control by the Numbers* (New York: Ford Foundation, Winter 2001). See also William K. Rashbaum, “Crime-Fighting by Computer: Scope Widens,” *New York Times*, March 24, 2002.
4. Raymond Dussault, “Maps and Management: Compstat Evolves,” *Government Technology*, April 2000.
5. Michael Eugene, Robert Carlson, Heidi Hrowal, *Managing for Results in America's Great City Schools: A Report of the Performance Measurement and Benchmarking Project* (Washington, DC: Council of the Great City Schools, April 2007).
6. Of course, managers also have to be aware of the possibility of an audit in order to prevent “overcounting.”
7. Frederick M. Hess and Andrew P. Kelly, “Learning to Lead: What Gets Taught in Principal Preparation Programs,” *Teachers College Record* 109, no. 1 (2007), available at www.aei.org/article/25350.
8. Winnie Hu, “Statistics Pinpoint Problems in Paterson Schools,” *New York Times*, December 2, 2007.
9. Los Angeles County Office of Education, *2006–07 Annual Financial Report* (Downey, CA: July 2007).
10. Frederick M. Hess, *Spinning Wheels: The Politics of Urban School Reform* (Washington, DC: Brookings Institution Press, 1998).