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Assistance and Accountability in Externally Managed Schools: The Case of Edison Schools, Inc.

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Edison Schools, Inc., is the largest and most visible among a growing number of Education Management Organizations that have entered into contracts to manage public schools, including both conventional and charter schools. Edison's approach to managing schools is comprehensive, and it distinguishes itself from most other school improvement strategies by simultaneously addressing both the *resources and assistance* provided to schools and the *accountability systems* under which school staff operate. In this article we explore the ways in which the assistance and resources provided by Edison (including diverse professional development opportunities, materials, technology, and other tools), as well as accountability mechanisms (such as monitoring and rewards), have translated into principal and teacher actions, and the factors that facilitated or constrained educators' efforts to implement the Edison design and improve teaching and learning. Drawing on data gathered from extensive interviews, observations, and document reviews collected during a four-year comprehensive study of Edison schools, we demonstrate how Edison intends to promote not only educators' capacity but also their motivation and opportunity to deliver high-quality instruction. We examine variation that occurs across schools as teachers and principals respond to these system-level efforts. In addition, we identify several important predictors of variation in implementation, including the strength of instructional leadership provided by the principal and the presence or absence of district-imposed constraints such as union contract rules.

Portions of this article were drawn directly from a RAND report (see Gill et al., 2005).

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New forms of governing and managing public schools have proliferated in recent years, and have led to rapid growth among companies that operate public schools under contract (Hentschke, Oschman, & Snell, 2003; Miron & Applegate, 2000). Many factors have supported this growth, most notably the proliferation of charter school legislation as well as accountability policies giving school districts the option and, in some cases, the mandate to contract out services for low-performing schools. Indeed, private management of public schools may continue to grow in the future, because the federal No Child Left Behind (NCLB) Act includes private management as one of the strategies that school districts may use to improve chronically low-performing schools. Both for-profit and nonprofit organizations have entered into management contracts with public schools, but much of controversy surrounding these Educational Management Organizations (EMOs) has focused on the for-profit providers. In the 2005–06 school year, for-profit EMOs were managing 521 public schools serving nearly 240,000 students across the United States (Molnar, Garcia, Bartlett, & O'Neill, 2006).

Among these EMOs, the largest and most visible is Edison Schools, Inc. In 2004–05 Edison served approximately 65,000 students in the schools it managed, and tens of thousands of additional students through other initiatives. Most of Edison's schools are operated under contract with local districts that have sought new management of existing schools, often because the schools have a long history of academic failure. Other Edison schools are brand-new start-ups, typically charter schools that Edison operates under contract with a local organization holding the charter, and Edison manages a few schools under contracts with states that have instituted takeovers as a result of chronic failure. Edison's approach to managing schools is comprehensive, and it distinguishes itself from most other whole-school reform strategies by simultaneously addressing both the *resources and assistance* provided to schools—such as professional development, materials, technology—and the *accountability systems* under which school staff operate, which include monitoring and rewards.

Because of Edison's prominence, it has been the focus of much of the debate surrounding for-profit EMOs. There has been limited empirical evidence to inform this debate. From 2000 to 2005 Edison contracted with RAND to conduct a comprehensive evaluation of achievement in Edison schools, and to examine Edison's design and how it is implemented in schools.[1] This article draws from the RAND study to describe Edison's approach to supporting school improvement, the ways in which the support strategies and accountability mechanisms translate into principal and teacher actions, and the factors influencing these efforts. We also present suggestive evidence of conditions that may influence achievement trends in Edison Schools. Specifically, we address three broad research questions:

[1] For further details, see Gill et al. (2005).

- What is Edison Schools' approach to and key strategies for supporting improvements in teaching and learning? What makes it different from other external assistance providers?
- How do these strategies play out at the school and classroom levels? What factors influence teachers' and principals' efforts to fully realize Edison's vision for improvement?
- What conditions and factors are associated with student achievement among Edison Schools? What school-level factors appear to matter most?

The answers to these questions illustrate the unique ways in which Edison has gone about supporting and scaling up teaching and learning improvements, and the factors influencing its efforts to translate its vision for a "world-class" education into a reality at the school and classroom levels. Of course, "scale-up" in the context of an organization privately contracted to run public schools means something different than it does with regard to other partnerships examined in this issue of the *Peabody Journal of Education*. Unlike support organizations that often seek to assist districts with improving teaching and learning in all of their schools, Edison's clients rarely want it to implement its model across an entire system. Instead, Edison may be one facet of a larger strategy to increase capacity to bring high-quality teaching to scale—for example, in Philadelphia, where Edison represented one partner in a larger "diverse provider" model in which many organizations received contracts to run various schools throughout the district. From the internal perspective of Edison Schools, scale-up also translates into efforts to enact its school design across a large number of schools throughout the country—a significant challenge of which is ensuring high-quality teaching and learning in a wide range of contexts and with support staff that are often not located in the same geographic area as the schools (i.e., a "virtual district").

In the following article, we first provide background on Edison Schools, including its history and past research on implementation and achievement, and describe our data sources and methods of analyses. We then describe Edison's overall approach to supporting improvement, followed by an analysis of how principals and teachers responded to these strategies in case study schools. Next we present a brief exploratory analysis of the relationship between implementation and achievement in our case study schools and conclude with implications for policy and practice.

BACKGROUND ON EDISON

As one of the oldest EMOs in the country, Edison has spent more than a decade building its organization and system of schools. In 1991, Christopher Whittle, previous founder of Whittle Communications and Channel One News service for

schools, launched the Edison Project (renamed Edison Schools, Inc., in 1999). The Edison team spent three years developing a comprehensive school design that it regarded as exemplifying the best ideas from both education and business about curriculum, teaching methods, assessment, educational technology, staff development, and management. Edison sought to contract with school districts, charter-authorizing agencies, and charter holders to manage new and existing schools with this new design. Under these contracts, Edison would operate all aspects of the school, including curriculum, instruction, budgeting, hiring and firing, and staff development. The company would receive the same total average per-pupil funds available to local districts and "invest its capital up front on all new instructional materials, technology, and training to give the school a fresh start" (Chubb, 2004, p. 488).

In 1995, Edison opened its first four schools. For the next six years, the company experienced rapid growth, operating 133 schools by 2002. During this period of rapid growth, Edison leaders discovered that they needed systems to better support school design and implementation across a large number of schools (personal communication, 2002). Having spent much of the early history developing and refining the school design, Edison leaders built up new systems to better support and monitor operations and achievement. These systems, which have been refined over the years, are a major focus of this article.

After 2002, Edison's expansion slowed amidst financial and political challenges, even as the company signed its largest single contract ever, to manage 20 schools in Philadelphia.[2] As of 2004–05, after several contracts were terminated for financial, academic, or political reasons, at the initiative of Edison or its clients, 103 schools were operating under Edison management. Edison continued to refine its system-level support for the schools it manages and began to diversify the portfolio of services it offers. In addition to its whole-school management partnerships with districts and charter authorizing agencies, the company offers other services such as its interim benchmark assessment system; technology and technical assistance with data; summer and after-school programs; supplemental educational services; and management consulting under the "Edison Alliance" flag, through which it offers access to many elements of its comprehensive reform model without taking on operational authority over a school. Although worthy of examination as other examples of external assistance to districts, this article does not focus on these other services but instead Edison's whole-school management efforts.

In sum, in more than a decade of operating schools, Edison has gone from spectacular growth to retrenchment, a lower public profile, and diversification of its services. During this time, it also experienced an important shift in attention from

[2]For further details of Edison's history in Philadelphia and the financial ups and downs, see Gill et al. (2005).

crafting its ideal school design to recognizing the need for developing system-level infrastructure and supports to ensure high-quality implementation of its design. These systems and supports are particularly important, given that implementation at scale has been a difficult problem for many school reform models (see, e.g., Berends, Kirby, Naftel, & McKelvey, 2001; Bodilly, 1998; Kirby, Berends, & Naftel, 2001).

PRIOR RESEARCH ON EDISON SCHOOLS

Like comprehensive school reform models, Edison incorporates a broad set of services that are intended to be implemented at all of its schools—including a comprehensive curriculum package, enrichment programs such as foreign languages and art, instructional techniques, frequent assessments, professional development, extended school day and year, career ladders for teachers, and technology (discussed in more detail in subsequent sections). Unlike many comprehensive school reform models, however, relatively little research has examined achievement in Edison schools, and even fewer studies have investigated implementation of the Edison design.

The most comprehensive study of student achievement in Edison schools was completed by RAND in 2005 (Gill et al., 2005), which included both current and previously Edison-managed schools. RAND found that average gains in Edison schools during the first three years of Edison operation did not exceed the gains of matched comparison schools, but Edison results relative to comparison schools improved in years four and five. At that point, most Edison schools were matching or exceeding the gains of comparison schools, depending on the specific analysis conducted. One of the most important findings from that analysis is that performance may be a function of time: Edison schools' average performance improves as schools gain experience implementing the design.

As for implementation studies, the few that have been conducted suggest that although schools are able to enact many features of Edison's design, they vary in their ability to fully realize the ideal of the model (Government Accountability Office, 2002; Gomez & Shay, 2000; Rhim, 2002). For example, one evaluation of an Edison school found that it was able to implement several features with more fidelity—including the extended school day, extended school year, and daily professional development periods for teachers—but struggled with other features, such as achieving a "rich and challenging" curriculum, integrating technology, and implementing family partnerships (Rhim, 2002). Another single-school evaluation suggested that although the Edison design was well implemented, this implementation varied by year, growing stronger as the school remained under Edison's management over time (Gomez & Shay, 2000). In addition, this limited research identifies several factors affecting implementation. Some factors appeared

to constrain school efforts to implement the school design, including relationships with teachers' unions and teacher burnout and turnover because of rigorous demands required by the Edison design (Cookson, Embree, & Fahey, 2000; Rhim, 2002). Others facilitated fidelity to the Edison vision, including the investment in professional development opportunities for teachers, which enhanced teacher morale and enthusiasm (Cookson et al., 2000), and time (Gomez & Shay, 2000).

Building on this literature, our article seeks to understand Edison's overall model of improvement—with particular focus on the system-level resources, assistance, and accountability mechanisms—and the extent to which it translated into teacher and principal actions in a diverse sample of schools. Our findings add to the existing body of literature by examining how specific features played out in schools and classrooms and the challenges educators faced in enacting these features. It also adds exploratory evidence of school-level factors related to student achievement. The next section describes the data we examined and the methodology employed.

DATA AND METHODS

This article draws on data collected from a variety of sources between 2000 and early 2005. The following section describes the sampling, data sources, and analyses we employed.

School Sample

To examine school-level implementation of Edison's design, we visited 23[3] Edison schools that were selected to provide a range of school contexts and student populations. In particular, we selected schools to represent variation in local context (as represented by state and urban vs. suburban status), the year Edison began operating the schools (ranging from 1995, when Edison's first schools opened, to 2003), and the form of governance (i.e., charter schools and district contract schools).

[3]Not all 23 schools participated in the study from the start. We initially selected 15 schools in 2001. By 2003, three of the original 15 case study schools were no longer under Edison operation and a fourth elected to drop out of the study (and soon thereafter terminated its relationship with Edison). We replaced these four schools with four schools that were new to Edison, permitting us to maintain our sample size and a sample that better represented Edison's current portfolio of schools. In the fall of 2004, the RAND study team concluded that it would be useful to conduct a few additional school site visits as our study neared completion. Rather than return to schools we had previously visited, we elected to add four new elementary schools selected to add more balance in terms of governance and number of years under Edison's management.

TABLE 1
Descriptive Characteristics of Case Study Schools and All Edison Schools

Schools	Case Study Sample (N = 23)	All Edison Schools Operating 1995–2005 (N = 144)
Charter school	43%	40%
Contract school	57%	60%
Start-up school	39%	31%
Conversion school	61%	69%
Opened 1995–97	26%	15%
Opened 1998–2000	48%	47%
Opened 2001–03	26%	35%
Located in Michigan	9%	14%
Located in Pennsylvania	17%	24%
Average total enrollment	581	662
Average % Asian	2	2
Average % Hispanic	16	21
Average % Black	60	62
Average % White	22	15
Average % FRL	70	74

Note. FRL = students eligible for free or reduced-price lunch.

Table 1 provides summary statistics on the sample of Edison schools, as compared with the full universe of Edison schools operating during the company's first decade. As the table indicates, the sample fairly represents the Edison universe on most key dimensions. The one respect in which the case study schools differ notably from the larger Edison universe is that, looking retrospectively at their full Edison histories to this point, their achievement results were somewhat better on average than those of other Edison schools, in both reading and math. Despite this average difference, however, the case study schools represent the full range of Edison's academic performance, with case study schools appearing in every quartile of the Edison-wide distribution of achievement trends.

Data Sources

Case Study Data

In 2001, 2003, and 2004 we observed classroom instruction and conducted extensive interviews with administrators, teachers, and staff in our sample of schools using semistructured protocols. In addition, we collected relevant documents (e.g., school improvement plans), listened to monthly "account review" calls in which Edison headquarters staff discussed our case study schools, and conducted telephone interviews of Edison regional staff responsible for overseeing our case study schools and relevant Edison clients (e.g., chartering authority officials, state and district officials).

Edison System-Level Data

We conducted several rounds of interviews with Edison staff at all levels of the organization (corporate and regional offices) in 2000, 2002, 2004, and 2005, and we examined documents to understand Edison's strategies for school improvement and how these strategies translate into a concrete set of design components. We also observed several Edison conferences and professional development meetings in 2003 and 2004.

Student Achievement Data

For the larger Edison study, we gathered student achievement data on state accountability tests for each Edison school and a set of comparison schools (see Gill et al., 2005, for details on the achievement data and selection of comparison schools).

Analysis

Following each case study site visit, researchers analyzed all interview and observation notes and transcripts, as well as all documents collected on-site, and developed analytic memoranda summarizing overall findings about the school context and its implementation of the Edison school design. In addition, the RAND research team created a series of codes intended to measure the extent to which a wide range of design elements and contextual factors—from the implementation of each component of the curriculum, to the principal's skill as an instructional leader, to the existence of an extended school day and year—were present in each case study school. To ensure consistency, codes were assigned to each case study school during group meetings that included site visitors and other members of the research team. For most variables, codes were given in one of three categories: weak, moderate, or strong implementation. For some analytical purposes, we collapsed these into two categories: strong implementation versus anything less.

After coding all measures for each of the 23 case study schools, we combined several related measures into indices representing average results across several variables. Two of these indices figured prominently in our analyses. The first encompasses the implementation of curricula in subjects other than reading and math—that is, social studies, science, "specials" (art, music, physical education, and world languages), and core values (Edison's character education curriculum). These subjects constitute important elements of Edison's "world-class" educational model, but NCLB does not attach high stakes to test results in the subjects, so examining their implementation provides evidence of schools' attention to objectives other than those for which the state is holding them accountable. The

second index encompasses major features of what we characterize as the school's professional environment, including the use of houses, the availability of planning time, and the prevalence of site-based professional development. Both of these indices had high levels of internal consistency, as indicated by coefficient alpha estimates of .91 and .84, respectively.

We then divided the coded variables into two groups, largely corresponding to accountability systems and resources/assistance. We ran cross-tabulations and conducted exploratory statistical analyses that viewed the accountability measures as independent variables and the resource/assistance measures as dependent variables, permitting us to assess some of the underlying logic of Edison's strategies by examining relationships between accountability and resources. The aim was to examine in an exploratory way whether schools in which Edison's accountability systems are operating according to plan see better ground-level use of the resources/assistance in the Edison design. Where we found interesting and significant relationships, we report them throughout this article. In addition, by incorporating school-level achievement estimates for the case study schools, we were able to examine relationships between accountability systems and resources/assistance, on one hand, and student achievement outcomes, on the other.

Limitations

Findings are based on examination of a relatively small number of Edison elementary schools that were not randomly selected. The aim of the case study examination was not to assess how Edison schools compare to conventional public schools (thus the absence of qualitative data collection from a non-Edison comparison group), but (a) to assess the extent to which Edison schools in practice match Edison's ideal in terms of design, and (b) to examine factors that might explain differences in school practices/teacher and principal actions and in student achievement among Edison schools. Given the limitations inherent in a small sample size, we sought a sample that would capture a wide range of Edison elementary schools to ensure sufficient variance in accountability systems, use of Edison resources and assistance, and achievement outcomes to permit us to understand how these various factors might be related. These analyses should be considered exploratory, and not necessarily generalizable to the full population of Edison schools.

The next section describes Edison's key strategies for supporting improvement, followed by a discussion of how these strategies played out at the school level.

EDISON'S APPROACH TO SUPPORTING IMPROVEMENT

The stated educational aim of Edison's school-management business is the provision of "world-class education" to all of its students—defined as one that

"cultivates the mind to be ready for opportunities of every kind" in a rapidly changing world (Edison Schools, n.d.). In Edison's view, this means that its students should have access to content in a wide range of subjects including arts and foreign languages. At the same time, Edison defines the critical primary measure of world-class education to be proficiency on annual state high-stakes assessments in reading and math (and additional subjects in some states). A focus on measurable progress on high-stakes tests has been a central characteristic of Edison since it opened its first schools more than a decade ago.

In the service of world-class education, Edison has devised a range of strategies to promote in its teachers and principals not only the capacity to deliver high-quality instruction but also the motivation and opportunity to do so. The attention to all three of these components—capacity, motivation, and opportunity—makes Edison's strategies for student achievement unusually comprehensive. In Edison's view

> to change schools thoroughly, it is essential to change everything at once. Incremental reforms are too easily undone by those elements of the school that have not yet been changed. When everything changes at once, there are fewer old habits to break. (Edison Schools, 2004, p. 11)

Edison's strategies for school improvement can be broadly classified into two categories: (a) Providing resources and assistance in support of a coherent and comprehensive school design, and (b) implementing accountability systems that aim to ensure that the resources and assistance for the design are in place and used as intended.

Figure 1 characterizes these strategies graphically. The resources and assistance Edison seeks to provide include technical capital (including curricula, assessment systems, and technology), human capital, social capital, and time, and they are directed at teachers, principals, and students and their families. Edison's accountability model includes direct line and staffing authority, monitoring and rewards, parental involvement and market accountability, and the reduction of political and bureaucratic accountability that is prominent in conventional public schools. As we show in the next sections, Edison's model is ambitious in its use of resources and assistance, but it is most clearly distinguished from conventional public schools (and from other providers of comprehensive school designs) in its accountability systems.

Resources and Assistance

The resources and assistance that Edison seeks to put in place to build the capacity of teachers and principals are wide ranging, encompassing technical capital, human

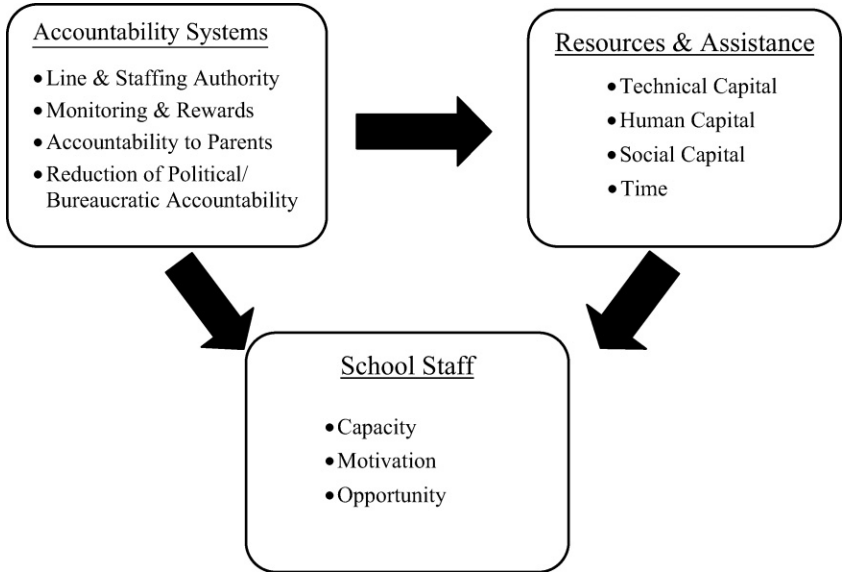

FIGURE 1 Edison's strategies for promoting school performance.

capital, social capital, and time. We briefly discuss Edison's vision for each of these components next.

Technical Capital. The key elements of the technical capital that Edison provides to schools include curriculum, assessments, and a variety of technology resources.

Curriculum. Edison's design teams selected programs they viewed as best supported by rigorous research (e.g., Everyday Mathematics in elementary grades) with some supplementary Edison-designed programs. Edison's curriculum goes beyond basic skills in reading and math to include explicit components in writing, social studies, science, art, music, world language, and fitness/health (Edison Schools, n.d.). Edison has sought to balance the need for standardization (considered essential for scaling up the model nationwide) and the need for flexibility (considered essential for promoting buy-in and adaptation to local norms as well as state-level policies; Chubb, 2004).

Diagnostic assessments and analysis tools. One of the key supports for the alignment of Edison's instructional programs with local standards and assessments is the Edison benchmark system, an online system of monthly

assessments developed by Edison. The benchmarks are monthly assessments in mathematics and reading, delivered online to Edison students in Grades two through eight, and are intended to provide rapid results and information to help teachers identify student needs and adjust instruction to meet those needs. The tests are customized to each state's standards and accountability tests, with items that resemble the content and format of the state tests. The benchmark results, therefore, can be used not only to diagnose the academic strengths and weaknesses of a student or a class but also to predict the likelihood that a student will achieve the state's proficiency standards. The system allows school staff to generate a series of reports that are designed to present information formatted in a user-friendly way. In recent years Edison has encouraged schools to use additional assessment data to guide instruction and instructional decisions, including the Dynamic Indicators of Basic Early Literacy Skills to gauge early elementary school student reading skills, and the Scholastic Reading Inventory to determine student reading levels. Edison regularly provides school staff hands-on training and tools to help them interpret and use achievement data.

Other technology. Telecommunications technology has represented a well-publicized part of Edison's academic model since the launch of its first schools, and although Edison has changed some aspects of its technology strategies, it continues to make substantial investments in technology in its schools. Teachers and administrators are given laptop computers, each classroom typically has a few desktop computers, and each school has a dedicated computer lab for communal use (in which benchmark assessments are administered, as well as instruction in computer skills). Edison has also created an intranet called The Common, a Web-based, "message, conferencing, and information system" that provides links to current research, curriculum materials, lesson plans, and discussion groups. Edison's technology investments also include telephones in every classroom and voice mail for every teacher, regarded as essential to promoting better, more-frequent, and more-efficient communication between teachers and parents.

Human and Social Capital

Edison's support strategies aim to promote both human capital and social capital in its schools, addressing not only the capacity of its teachers and principals but also their motivation. These strategies include a variety of centrally provided professional development programs as well as school-site-based resources that are designed to develop teachers' knowledge and skills and to promote elements of social capital such as morale, trust, and school spirit.

Centrally provided professional development. Edison offers a wide range of professional development opportunities to its teachers and principals, beginning in the summer prior to the initial hiring of new staff (or the launch of the Edison school). These include the following:

- **Teaching Academies.** All teachers new to Edison are expected to attend intensive, week-long "Teaching Academies" delivered in large part by experienced Edison teachers who have been certified by Edison as trainers in the summer prior to their 1st year in an Edison school. The summer academies emphasize curriculum implementation, pedagogy, analysis of student achievement data, and classroom management. The summer academies also are used to begin building social capital, providing opportunities to establish relationships with teachers from other Edison schools, and using motivational programs that introduce teachers to Edison's "culture of achievement."[4]
- **Leadership training.** Edison principals and other school leaders receive approximately 2 weeks of leadership training each summer. The training focuses on analysis of data, specifically the use of the Edison benchmark system, as well as building management, improving curriculum and instruction, promoting staff capacity, supervision and evaluation, and the creation of a strong school culture. As with the teacher academies, this training is intended to promote social capital as well as human capital.
- **Achievement Academies.** Edison conducts regional "Achievement Academies" during the fall, aimed primarily at principals and school-level curriculum coordinators (teachers responsible for coordinating site-level implementation and professional development (PD) for a particular subject). These academies provide strategies that will enable schools to increase achievement for all students, as well as time that is reserved for work sessions, in which school teams utilize the strategies to update and revise their own individual School Achievement Plan.
- **Principals' Leadership Conference.** Each fall Edison gathers its principals in a Principals' Leadership Conference (PLC), at which it provides additional leadership training and offers recognition to the principals of high-performing schools.
- **Edison Evenings.** In recent years, Edison has begun offering an ongoing series of small-dose professional development opportunities in the form of "Edison Evenings," voluntary training sessions on particular topics, delivered

[4]This includes methods to increase student motivation to achieve (e.g., displaying exemplary work), to involve parents in supporting the school (e.g., advisory councils), and to recognize and reward staff for performance. See Gill et al. (2005) for further discussion.

via conference call and computer linkup to interested Edison teachers across the country.

Ongoing support from Edison staff. In each subject area, Edison maintains a small staff of full-time curriculum experts (often individuals who previously taught in Edison schools), known as National Curriculum Coordinators, who aim to provide systemwide professional development and support individual schools as needed, via e-mail, telephone, and occasional site visits. The schools' primary contact for instructional support purposes is an Edison regional Achievement Vice President—an individual assigned to about seven schools who provides support and assistance to principals and school staff on all matters related to instruction and student achievement, as well as design implementation and student discipline. The Achievement VPs—who, like the National Curriculum Coordinators, are usually former school-level staff, either principals or teachers—assist schools in making plans for student achievement, in analyzing test results, in complying with the demands of NCLB and state accountability systems, and in executing basic program components (e.g., ensuring that curriculum coordinators develop observation schedules or that newly hired teachers attend training).

Supports to develop site capacity and school-based professional development. Edison's approach to professional development includes a variety of day-to-day activities that are expected to occur at the school site and are usually led by school staff. In addition to the training previously described, Edison seeks to develop site capacity in several ways:

- **Standards and rubrics for instructional leadership.** Edison leaders believe that principals should be instructional leaders, as well as good managers of building and budget, and facilitators of a strong school culture to ensure results in five key areas—student performance, school design, customer satisfaction, financial management, and operational excellence. In support of this view, Edison has developed detailed standards and rubrics specifying principal expectations, which are used in an annual appraisal process.
- **Distributed leadership model and roles.** The Edison school design tries to distribute instructional leadership responsibilities and capacity among teacher leaders in the school. Each school is supposed to have a leadership team that is responsible for helping the principal develop, adjust, and monitor school policies, procedures, and programs. The leadership team includes not only the principal and the academy directors but also the lead teachers for each of several small "houses" into which the school is organized. Each house consists of about six teachers, usually representing two or three grade levels (within an "academy"). Students are expected to stay in the same

houses as they progress through several grades, so that the team of teachers in the house can be responsible for instructing and managing a common group of students over time. The lead teacher for each house is expected to serve as a mentor for the other teachers with respect to both pedagogy and classroom management, and (where permitted by contract) to take some responsibility for the evaluation of junior colleagues within the house. Each house team is expected to meet daily, and each daily meeting is intended to be an opportunity for teachers to work together and develop their skills (Chubb, 2004).

Each subject area has a curriculum coordinator in the school who is generally a teacher given additional responsibilities including managing curriculum materials, providing ongoing professional development in the curricular area, conducting classroom observations and modeling instruction. Site capacity under the Edison design also includes full-time staff who are responsible for the school's special education program and for student and family support related to behavioral challenges and special needs.

Time

Edison describes "A Better Use Of Time" as one of its key strategies to promote student learning (Edison Schools, n.d.). This involves, first of all, a substantial increase in total instructional time for students. Ideally, the standard Edison school year is expected to be 198 days, about 10% longer than the 180 days required in most states. The standard Edison school day is expected to be longer as well, an hour or more beyond the time expected of most public-school students. The additional time is intended to help fit in all components of the curriculum and provide teachers with two periods a day for planning and professional development. The "better use of time" also involves the creation of a "safe and orderly learning environment" (Edison Schools, 2002a, p. 5) that is intended to allow teachers to focus on teaching—as opposed to discipline problems and other related issues that detract teachers' time and attention away from instruction. To support such an environment, Edison-developed "character and ethics" curriculum promotes the teaching and modeling of core values—wisdom, justice, courage, compassion, hope, respect, responsibility, and integrity—throughout the school.

Accountability Systems

What makes Edison, like other EMOs, novel on the American K-12 education scene are the accountability systems it intends to establish both within its schools and across its system. Unlike other providers of educational services and comprehensive school reform models examined in this issue, EMOs have operational

authority over the schools in which they work. Edison seeks to use this operational authority to impose accountability systems that supplement or replace many of the conventional accountability systems of American public schools. Edison's accountability model begins with straightforward line and staffing authority, adds a system of monitoring and rewards, and includes the reduction of conventional political and bureaucratic authority.

Line Authority

Edison regards operational authority over its schools as crucial. Principals in Edison schools report to regional "general managers," who in turn report to Edison executives in the New York headquarters. Edison's chief education officer serves a role analogous to that of a school district's chief academic officer and Edison's CEO is much like a district superintendent.

Staffing Authority

In Edison's view, one of the key aspects of operational authority over schools is the ability to hire and fire staff. Staffing authority, according to the Edison model, is important not only for ensuring the effective operation of line authority but also for promoting the buy-in of staff. Because Edison's school design is demanding and highly specified, it is especially important that its principals and teachers are supportive; voluntary transfer in and out makes that support more likely. Authority over staffing involves more than just hiring and dismissal. Edison has developed a career ladder internally that aims to give teachers opportunities to advance to greater responsibility and salary, in positions such as school-level curriculum coordinators and house lead teachers, without leaving the classroom for administration and on the basis of competence not seniority.

Monitoring and Rewards

Edison attends to the motivation of its staff not only with opportunities for advancement but also with systems to monitor and reward performance.

Information collection systems. Edison utilizes multiple means to gather information on design implementation, instructional performance, and student achievement in its schools. These include in-person visits to schools, monthly calls in which Achievement VPs and other corporate staff discuss each school's progress, and reviews of schools' Benchmark Assessment data.

Star rating system. Edison's "star rating" system is its key instrument for determining a school's eligibility for performance-based rewards. The system is designed to be "an objective measure from which we can celebrate success or set targets for improvement" (Edison Schools, 2002b, p. 3). Each year, Edison rates each of its schools in terms of five characteristics or "Points of Accountability," which it defined for its principals at their 2004 leadership conference as follows:

- **Operational Excellence** measures "the factors that we know are keys to healthy and successful schools," including student attendance, staff attendance, student mobility, teacher turnover, and graduation rate.
- **Customer Satisfaction** measures "a school's ability to please its students, parents, and staff" and averages student, parent, and staff ratings from surveys to determine overall customer satisfaction.
- **School Design** measures implementation of the "Edison Ten Fundamentals," including school organization, use of time, curricular program, instruction and pedagogy, assessment and accountability, professional development, technology, partnership with families, communications and community outreach, and system growth.
- **Financial Management** measures the fiscal health of the school and is determined in multiple ways, depending on the nature of Edison's contract with its client. Usually, successful financial management in an Edison school requires the school to meet an enrollment target.
- **Student Achievement** measures student learning and is determined by a complex formula that emphasizes relative growth in schoolwide proficiency rates as measured by state-mandated tests—and, more recently, by the ability to meet Adequate Yearly Progress.

Edison staff have developed detailed criteria and rubrics for awarding each school one to four "star" ratings in each of the five areas. Edison uses the star rating system to recognize and reward school and individual performance. Where allowed by contract, principals and teachers are also eligible for monetary bonuses based on weighted star ratings, which primarily emphasize student achievement and factors tied to academic success.

Other Accountability Mechanisms

In addition to these formal school-based accountability elements, Edison schools differ from most other public schools in their accountability to parents, which is achieved through choice-based assignment, parent advisory councils at each school, parent satisfaction surveys, and requirements for parents to attend quarterly conferences with their children's teachers. Edison tries to reduce bureaucratic accountability by giving principals more authority over budgeting than they

would have in conventional public schools—and, as a corollary, more freedom from the bureaucratic constraints that are typically imposed by districts. Edison also aims to insulate its schools from local politics, in the hope that this will maximize opportunities to focus on instruction. This aspect of Edison's accountability strategy is derived directly from the insights expressed in *Politics, Markets, and America's Schools*, in which Chubb and Moe (1990) argued that the direct operation of public schools by elected officials frequently prevents them from focusing intensely on their academic missions (see also F. M. Hess, 1999; Hill, Pierce, & Guthrie, 1997).

Edison Strategy Summary

In sum, the assistance and accountability systems that constitute Edison's strategies for promoting student achievement are intended to address all elements relevant to high-quality delivery of instruction, including capacities, motivation, and opportunities for school staff. In the next section we explore the extent to which Edison's strategies are realized in practice in a sample of its schools.

HOW EDISON'S IMPROVEMENT STRATEGIES ARE REALIZED IN PRACTICE

This section examines the ways in which teachers and principals responded to Edison assistance and accountability mechanisms. As we describe, nearly all of the Edison schools we visited across the country showed enough consistency of implementation to be clearly recognized as Edison schools, but we observed considerable variation in the extent to which they fully realized the Edison ideal. We start by examining how educators responded to Edison's accountability systems, followed by an analysis of their responses to the key assistance mechanisms.

Accountability Systems

As Edison leaders have acknowledged, they do not always have the opportunity to fully implement all of the accountability systems that their design involves. Each of Edison's contracts to operate schools is unique, and clients sometimes impose constraints that require compromises to Edison's ideal model.

Line Authority

As intended, Edison had operational authority over all of the case study schools we visited, with principals reporting to Edison's regional general managers. But Edison's authority over school operations was not always complete, and principals in some district partnership schools complained of the challenges associated with

reporting to "two masters": Edison and the district. Edison's charter schools usually had fewer problems with competing authority, but local charter boards sometimes sought to assert their influence, occasionally creating challenges similar to those experienced in many district schools. The ability to navigate the political and contractual waters associated with having two masters was a critical skill both for Edison principals and for general managers responsible for maintaining good client relations. In extreme cases, district clients viewed Edison as a mere vendor—providing curriculum, professional development, and assessment tools—rather than a manager with both the responsibility and the authority to run the school. Our case studies included a small number of schools where district clients had this attitude, and such schools typically only weakly represented the Edison culture.

Staffing Authority

Along with operational authority, Edison had authority to hire and fire the principal in nearly all of the schools we visited. Edison sets high expectations for principals, and it had dismissed more than a few who had fallen short. On at least one occasion it set a target of improving or dismissing the bottom quartile of principals, and followed through on the plan, firing 80% of the bottom-quartile group. In 2004–05, Edison made a point of evaluating principals early in the year, and dismissed at least two in midyear.

By contrast, we observed a few schools in which Edison's nominal authority over the staffing of the principal position was undermined in practice by the principals' personal relationships with the clients (district or charter authorizer staff). In short, Edison's de facto authority to dismiss a principal is sometimes less than the letter of the contract might imply.

The authority to dismiss an ineffective principal appears to matter. Edison case study schools in which RAND researchers gave principals strong ratings for instructional leadership (i.e., principals who appeared to spend a substantial amount of time visiting classrooms, who analyzed achievement data, and who took an active role in site-based professional development for teachers) also showed stronger implementation of both tested (reading and math) and nontested (science, social studies, specials, and core values) aspects of the Edison curriculum.[5] Moreover, schools with strong instructional principals had better achievement results (as we discuss further at the end of this article).

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[5]On a reading/math implementation scale ranging from one to two, Edison schools with strong instructional leaders had a mean score of 1.89, whereas schools without strong instructional leaders had a mean score of 1.61 ($N = 18$). On a nontested subjects implementation scale ranging from one to two, Edison schools with strong instructional leaders had a mean score of 1.68, while schools without strong instructional leaders had a mean score of 1.29 ($N = 18$). In both cases, differences were statistically significant at $p < .05$.

Edison's authority over *teacher* staffing was more often compromised than its authority over principals, largely because it usually was required to honor existing teacher contracts in its district partnership schools. In most of Edison's charter schools, teachers were employed under one-year contracts that were renewed at the discretion of the principal. But in district schools, Edison teachers usually had the same contractual and tenure protections as teachers in other public schools in the local district. (And we often heard principals in district contract schools long for the staffing authority available to charter school principals.) Edison teachers in district schools often received their paychecks from the district rather than from Edison.

In general, Edison was willing to accept compromises to its ability to dismiss teachers as long as the district made it relatively easy for teachers to voluntarily transfer out of the Edison school (see Chubb, 2004). Edison leaders believed that, in most instances, the voluntary transfer mechanism would ensure that the teachers who do not "buy in" to the Edison model would not stay. Consistent with this view, we saw only one Edison school that had substantial numbers of teachers who were actively opposed to Edison.

Within each Edison school we visited, the assignment of teachers to leadership positions—that is, the use of Edison's teacher career ladder—at least nominally followed the Edison design. Principals had the authority to appoint lead teachers and subject-matter curriculum coordinators in the case study schools, and they were not required to abide by seniority rules in making such appointments. In many district partnership schools, however, existing teacher labor contracts constrained Edison's ability to set salaries commensurate with the teacher ladder (rather than with seniority). Many of the young teachers we spoke with (and Edison's teachers are often young) looked favorably on these leadership opportunities, even if those opportunities did not include substantial pay benefits. They appreciated the chance to assume positions of instructional leadership in the school, earlier than would be possible under a seniority system. For instance, a lead teacher told us the career ladder provided teachers with the "incentive to strive, to be there."

Monitoring and Rewards

We observed a wide range of responses to Edison's systems for collecting information and rewarding schools and staff. First, we found a high level of detail in the conversations among Edison's central and regional staff occurring during Edison's monthly account review calls, which suggested an understanding by Edison staff of principals' instructional leadership capabilities, of the general quality of instruction in the school (particularly as related to subjects that are included in state assessments), and of the strengths and weaknesses of teachers. The integration of monthly test results and qualitative assessments by direct observers added

to the quality of these conversations. All of this information permitted Edison staff on the calls to develop targeted strategies to address problems that came up.

Nevertheless, Edison's systems for monitoring achievement and instruction had some weaknesses, driven in some cases by economics and geography. Even though each Achievement VP was typically responsible for only seven schools, those schools were in some instances widely dispersed geographically, making it difficult for the Achievement VPs to visit regularly. Moreover, Edison's information about staffing in schools was often unreliable, because data systems for staffing very often ran through the local school district rather than through Edison.

Second, in the schools we visited, Edison's star rating system had substantial success in getting the attention of principals and mixed success in getting the attention of teachers. This difference is related to the fact that substantial bonuses tied to star ratings were available to most (but not quite all) Edison principals, whereas contracts often precluded bonuses being given to teachers. Moreover, even where teacher bonuses were available, the bonus pool depended on the performance of the entire school rather than individual teachers. Within a school, the distribution of bonuses among teachers was typically at the discretion of the principal.

A minority of principals we interviewed expressed frustration at the complexity of the star rating system, perceiving it as mysterious, arbitrary, and at least partly beyond their control. More often, principals reported that their own motivations were primarily intrinsic, but that the availability of bonuses was a nice benefit. As one principal told us,

> I don't really think that, if a principal gets up everyday, a bonus is what they're truly after. It's a nice ending to a year of hard work, but I don't think that's what really pushes them to reach that. I think it's the children.

To the extent that the star rating system motivated behavior in the schools, it was reinforcing the same signals that are created by NCLB and attendant state high-stakes testing systems. We observed an intense focus on achievement on state accountability tests in many of the Edison case study schools—leading to practices both consistent and inconsistent with the Edison ideal of a "world-class" education that is both broad and deep. As we discuss later in this section, in some instances, a focus on test scores undermined the commitment to nontested subjects. Another consequence of NCLB that we increasingly observed in Edison central office discussions and in schools during the course of our study was a focus on "bubble kids"—that is, students whose current achievement levels place them near the state's cutoff for determining proficiency in reading and math. In response to NCLB, which requires all states to establish school accountability systems based on the proportion of students achieving proficiency and which sanctions schools and districts based on these proficiency targets, many public schools around the

country have sought to identify and direct interventions toward those students who are closest to the cut-point for proficiency (Booher-Jennings, 2005; Hamilton et al., 2007; Pedulla et al., 2003). Edison's monthly benchmark assessments gave its schools unusually good information for identifying bubble kids, and Edison actively encouraged schools to identify such students and develop interventions to prepare them for state exams.

In the Edison schools we visited, there was some variation in attention to bubble kids. Some Edison principals and teachers embraced the concept as a logical and appropriate way to have data drive instructional decision making. Others, however, were disturbed by the possible implication that students on both ends of the achievement spectrum—high achievers and low achievers—might be neglected in favor of those in the middle. These educators tried to maintain an instructional focus on improving the achievement all of the children in their schools, regardless of their current proficiency levels.

Other Accountability Mechanisms

Although site visitors had little opportunity to observe the case study schools' interactions with parents, our conversations with Edison teachers provided one indication that the communication was occurring. In nearly every Edison school we visited, teachers reported high levels of parent participation (typically better than 90%) in quarterly report card meetings. Edison's requirement that its report cards be given to parents in person appeared to be effective in bringing them to the school several times a year to meet with teachers.

As for being "schools of choice" as intended, the extent to which parents and students actively chose Edison schools varied considerably across our sample. Enrollment in an Edison charter school usually required an active choice by the family. Although also true in some Edison's district contract schools, others retained neighborhood assignment schemes in which parents had to actively opt out if they wanted their children to go to school elsewhere. Interestingly, we did not observe substantial differences between charter schools and district contract schools in terms of the implementation of Edison's curricula or of elements of the school's professional environment (i.e., houses, planning time, and site-based PD).

Edison's effort to clear away some of the bureaucratic constraints on its principals had only mixed success in the case study schools we visited. Many of the case study principals had greater authority over school budgets than they would in conventional public schools, but this authority varied widely, depending on the particular contract that Edison had with its client. Edison principals who were constrained by district requirements sometimes expressed frustration that they lacked the authority available to their colleagues, particularly in charter schools. Principals in district contract schools more often had to deal with external bureaucratic

challenges, related to issues such as building maintenance, budgets, paperwork, materials, or district-sponsored professional development.

The additional local bureaucratic and contextual obstacles that some Edison schools faced may have affected the implementation of the design. In our case study sample, schools where staff reported more local constraints had weaker results on the professional environment index, suggesting more difficulty in implementing the Edison house structure, the planning periods, and site-based professional development.[6] In some schools, for example, Edison was unable to implement its longer school day, which in turn prevented the implementation of its standard of two daily planning periods for teachers. Across our case study schools, however, we did not observe a relationship between local constraints and the implementation of the curriculum.

Assistance and Resources

We now turn to the assistance provided to Edison schools and the responses we observed within case study schools.

Technical Capital: Curriculum

Nearly all of the Edison schools we visited, in all parts of the country, were immediately recognizable as Edison schools, by virtue of the curriculum materials and examples of student work covering nearly every wall, in classrooms and hallways alike. Only two of the case study schools demonstrably deviated from the standard Edison appearance, and in those two schools the absence of Edison wall displays was a clear sign of much deeper problems with the commitment of the staff to the Edison model.[7] The various materials associated with the Edison curricula (including textbooks and manipulatives) were consistently present in the schools we visited, although many schools reported delays in receiving the materials during their first year of operation.

Our teacher interviews and classroom observations provided only a limited view of the implementation of the curriculum in the classroom. Not surprisingly, there appeared to be more implementation challenges during the first year of Edison operation than during later years. Many of our study participants said that learning

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[6]Schools without substantial local constraints had a mean score of 1.77 on the professional environment index (for which scores ranged from one to two), whereas schools with substantial local constraints had a mean score of 1.57. The difference is statistically significant at $p < .05$.

[7]One of these schools was a very troubled 1st-year Edison school in Philadelphia, whereas the other was a long-time Edison school, which not long after our visit ended its contract. Both schools had serious problems with leadership and morale.

how to teach using the new programs was difficult, particularly given that new curricula in every subject were being introduced simultaneously. In most of the schools we visited, implementation appeared to be strongest in reading (Success For All (SFA) or Open Court) and math (Everyday Mathematics)—consistent with the emphasis of Edison's central office, and with the incentives created by most states' test-based accountability systems. Nearly every school followed a schoolwide daily schedule involving 90 minutes of simultaneous, mandated reading instruction for all students, and at least 60 minutes of daily mathematics.

In some schools we were told of occasional displacements of curriculum altogether, but we saw no evidence that this occurred frequently. More often, we learned of schools supplementing the curriculum with additional materials designed to prepare students for state exams. Edison's flexibility in allowing schools to supplement the curriculum to meet the needs of local standards and assessments and its efforts to provide teachers with tools to embed test skills within and alongside the existing curriculum, as well as the time available in the long school day, may have contributed to maintaining the fidelity of implementation of its core programs in reading and math.

By contrast, we heard more reports that "nontested" elements of the Edison curriculum were sometimes displaced by test preparation or other priorities. Implementation of Edison's curricula in social studies, science, and "specials" (including art, music, and foreign language), was less consistent than the implementation of the reading and math curricula across the case study schools. A few teachers suggested that this displacement resulted in part from Edison's own focus on reading and math. External pressure from states' test-based accountability systems (which usually focus on reading and math) undoubtedly contributed as well, as it does in other public schools. Compromises in the implementation of nontested subjects were in some case study schools related to resource limitations. In Philadelphia, for example, Edison's contract with the district did not provide sufficient resources to fully implement the model, forcing the abandonment of the longer day, the longer year, and some of the fine arts curricula. According to Edison central office interviews, the budget crises that hit states and local governments across the country in the early part of this decade led to similar compromises in many of its schools.

Technical Capital: Diagnostic Assessments

Early in the development of the benchmark system, we observed a variety of implementation challenges in the schools. Benchmarks were originally issued on paper, which meant they required time to assess. The launch of the electronic benchmark system was plagued by a variety of technical problems, leading to frequent frustration in many schools when the system was overwhelmed. By the time of our second round of visits, however, these problems had been largely

ironed out, and the system appeared to be used faithfully and reliably at nearly all of the case study schools (with the exception of some new start-up schools).

More importantly, reports indicated that many teachers and principals found the benchmarks valuable, and were using the results effectively and as intended to diagnose instructional challenges and develop interventions. Reports of the misuse of benchmarks (for example, interpreting them as high-stakes assessments and providing preparation specifically for benchmark tests) were rare in the case study schools and were vigorously countered by clear messages from Edison's central office about appropriate use. Based on conversations with school administrators at the Principals' Leadership Conference, the provision of additional diagnostic instruments (such as Dynamic Indicators of Basic Early Literacy Skills) and analytic tools were also valued and much used.

Technical Capital: Technology

Our case study schools provided a few examples in which Edison's investments in computers and audiovisual technology were being well used by students as well as teachers, for example, in conducting a daily student-run live video announcement delivered to all classrooms at the beginning of the day. By 2003, virtually all of the case study schools were participating in the monthly online benchmark assessments. But with the important exception of the benchmarks (discussed previously), we saw little evidence of a systematic, Edison-wide plan for the use of computer technology in the curriculum, despite some investments such as state-of-the-art experimental computer labs installed at a couple of schools. Moreover, school staff frequently complained to us about technical problems, especially in the first year of the school's operation, and insufficient technical support from Edison. The schools that were making extensive use of computers in instruction appeared to be doing so largely at local initiative. We have no reason to believe that Edison schools are trailing other public schools in the use of computers in instruction, but the reality in the Edison schools is well short of the high expectations that Edison created for its clients. As of this writing, however, Edison has launched a major research and development project that is, among other things, preparing to substantially increase the role of instructional technology in Edison Schools.

Unlike instruction, communication in Edison schools was clearly advanced by Edison's technology investments. Teachers generally appreciated Edison's provision of laptops and e-mail (except in the few cases where budget constraints precluded the provision of laptops), and many teachers used them to correspond both with colleagues in the school and with Edison's regional and national staff. Edison's intranet, known as The Common, was used less consistently but was regarded as an asset by the teachers and principals who took advantage of its resources. Many teachers also noted that these investments benefited

parent communication. The phones and voicemail made it easier for parents and teachers to communicate about homework assignments and behavioral challenges. Teachers also valued them as an indication of professional respect, so the investment actually aided teacher morale in some schools.

Time

Most of the case study schools we visited used an extended school day (19 of 23 schools) and an extended school year (15 of 23 schools), as intended in the Edison design. Edison's Philadelphia schools did not operate with a longer day and year, as a result of contractual and resource limitations there. Outside of Philadelphia, some Edison schools had shortened their academic year, in part because of resource limitations and in part because of concerns about teacher burnout. Edison leaders believed they had been more successful with the longer school day than with the longer year, for a number of reasons. Attendance was usually lower during the additional weeks of school, because families may have had other children in schools using conventional calendars and therefore may have been unprepared to have their children in school, and state attendance requirements could create unintended problems for schools with a longer year, if attendance was measured during those weeks. Despite these challenges, many Edison schools not only maintained longer standard schedules but also operated after school and Saturday programs to provide additional skill training, especially for bubble kids and especially in the weeks prior to state exams. Finally, most of the case study schools were able to put in place the two periods of daily planning and professional development as intended, but some (such as those in Philadelphia) had difficulties related to local contractual issues.

With respect to the quality of classroom instructional time, site visitors observed in classrooms of case study schools across the country teachers using various classroom management techniques that Edison taught to all teachers in the Teaching Academy, and they appeared to be effective in keeping students focused and alert, and maintaining a "safe and orderly learning environment." In addition, teachers in many schools made effective use of the house support structure to handle behavior problems before they required the attention of the school administration. In a few schools with serious and chronic discipline problems, these appeared to be associated with weak building management on the part of principals.

Human and Social Capital

We now turn to Edison's investments in the skills, morale, and trust of its school staff, addressing first the professional development resources provided by Edison's central office, and then the school-site mechanisms for professional development.

Centrally provided professional development. Edison's up-front investment in the skills of teachers and principals was generally well received. Edison teachers often described the summer Teaching Academy as overwhelming in its intensity and the breadth of its content, and they reported that the value of the seminars varied with the skills of the presenter. Nevertheless, they were typically pleased with the simple fact that Edison paid for their participation in a weeklong conference at an out-of-town hotel. The professional development conferences were also viewed by many Edison teachers as a sign that they were respected as professionals. This had benefits in terms of morale and trust even apart from the substantive benefits the training may have had for the skills of teachers.

Perhaps the primary concern about Edison's professional development conferences for teachers was that the investment was often lost as a result of attrition. Edison-wide, rates of teacher attrition were unclear,[8] but it was a serious challenge at many of the case study schools—as it is at high-poverty urban public schools generally, which, like Edison, rely extensively on early-career teachers who have the highest rates of departure from the profession. Edison recognized that its efforts to build site capacity in schools were often hampered by attrition, and it had incorporated retention of teachers into its star-rating formula in an effort to encourage principals to promote stability.

Like teachers, many principals valued the summer leadership academy and the fall PLC as indicators of professional respect. We spoke to a number of Edison principals who appreciated the responsibility and support that Edison provided them, particularly in the area of instructional leadership. Relatively new Edison principals were pleased not only to be attending the conferences as learners but also to be given the opportunity to present to their colleagues. Nevertheless, like new Edison teachers, many new Edison principals found the experience overwhelming, particularly if they did not have prior experience acting as instructional leaders or managing budgets. A number of new principals told us they would like more support from Edison in these areas. Given the high expectations that Edison had for principals, and the extensive demands it placed on them, the PLC and its annual awards ceremony were particularly important for promoting morale and a sense of Edison-wide community among principals (although we heard some disgruntlement from a small number of principals who felt that unfair financial targets made it impossible for them to win awards).

Ongoing support from Edison staff. Because of Edison's reorganization that reduced its reliance on in-person school visits from its national curriculum

[8] Edison schools typically reported some sort of teacher turnover rate, but reported rates were based on local definitions of turnover and were therefore not necessarily comparable across Edison schools. We were unable to calculate an Edison-wide teacher turnover rate with confidence.

staff in favor of greater reliance on the regional Achievement VPs, the number of support visits to Edison schools appeared to decline, as Edison tried to reduce travel costs incurred by its central staff. The curriculum staff tried to replace some of the reduced school visits with remote support, via e-mail and phone, and via regularly scheduled "Edison Evening" professional development programs conducted by conference call. School staff generally appreciated their e-mail and telephone access to Edison's national curriculum staff, but many of them would have liked more in-person support. We heard more complaints about insufficient support in schools that were relatively isolated geographically (unlike those in Philadelphia, where staff felt well supported). For example, one staffer at a relatively new, and struggling, Edison school complained that "I feel like we've been left in the lurch." School staff members who interacted with Edison's national support staff were usually pleased with the quality of the support, although many of them would have liked it in greater quantity. We heard some complaints, however, in areas like science, where Edison invested fewer resources than in math or reading, and where many states did not yet have accountability tests.

Supports to develop site capacity and school-based professional development. Across schools, we saw wide variation in the extent to which the teaching staff viewed the principal as an effective instructional leader. Some Edison principals focused on the more traditional responsibilities associated with building management. Others, however, appeared to be highly successful at leading training sessions, modeling instruction, and motivating teachers. In our case study sample, there was some evidence that charter schools were more likely to have strong instructional principals than were district schools.[9] We can only speculate on the reason for this, but it may be related to the fact that charter schools were less likely to be bound by teacher contracts that narrowly define the scope of a principal's instructional supervision responsibilities.

As previously noted, strong instructional leadership by principals in the case study schools was associated with stronger implementation of both tested curricula (reading and math) and nontested curricula (science, social studies, specials, and core values). Moreover, we also found that Edison schools with weaker instructional leaders were more likely to subsequently end their contractual relationship with Edison than were schools with strong instructional leaders.[10]

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[9]Five of eight charter schools in the sample were coded as having strong instructional principals, whereas only two of ten district schools were rated with strong instructional principals. (In five schools, we lacked sufficient information to make a judgment about instructional leadership.)

[10]In the small sample of case study schools for which we were able to rate instructional leadership, only one of seven (14%) schools that later ended relationships with Edison had strong instructional leaders, whereas six of 11 (55%) schools that remained with Edison had strong instructional leaders.

The extent to which Edison's ideal of distributed leadership was implemented in the case study schools varied widely. In the best-functioning schools, the teaching staff viewed the opportunity to participate in schoolwide decisions via the school leadership team as one of the best features of the Edison design. In such schools, lead teachers appreciated the empowerment represented by participation in the leadership team. As one lead teacher noted, "To have ownership in something, you need to feel [you are a] part of it." The extent to which the leadership team involved genuine collaboration in decision making depended almost entirely on the personal style of the principal; some welcomed shared leadership, whereas others preferred a more autocratic model. We did not observe that this difference predicted a school's achievement results.

Similarly, the house structure was formally present in virtually every Edison school we visited, but its effectiveness and use depended on the skills and ambition of the lead teachers. We encountered examples of houses in which lead teachers provided active mentorship to their junior colleagues, assisted with behavior problems in the classrooms of other teachers in the house, and played an active role on the school leadership team. By contrast, some lead teachers lacked the capacity, motivation, or respect from their house members that would have been needed to take on the leadership responsibilities. In some schools, particularly in the start-up year, principals had difficulty finding experienced and motivated teachers to take on the role. Apart from the training that Edison provided them, few lead teachers had any prior training or experience in the evaluative role of the lead teacher—a role that represented a substantial cultural shift for nearly all teachers. In many district contract schools, however, this problem was rendered moot, because lead teachers were prohibited by the teacher contract from serving as evaluators.

Some of the challenges facing both lead teachers and school-level curriculum coordinators were inherent in Edison's model. In particular, although Edison sought to give substantial instructional leadership responsibilities to lead teachers and coordinators, the model did not give them additional time during the school day to pursue those responsibilities. In schools using SFA, the reading coordinator was freed of teaching responsibilities for half of the day; in other subjects, coordinators were full-time teachers who were expected to fulfill their responsibilities during their standard PD periods and when principals could find occasional substitutes enabling them to observe the instruction of their colleagues and provide coaching support. Curriculum coordinators in Edison schools across the country told us that they rarely had opportunities to get out of their own classrooms and act as coaches—a key task of a curriculum coordinator, according to the Edison design. As a result, many curriculum coordinators defined their jobs largely in terms of keeping track of the inventory of materials for their subject matter.

Summary

The best-functioning Edison schools demonstrated the promise inherent in Edison's model. These schools made productive use of system-level assistance and responded positively to Edison's accountability mechanisms. They were schools with strong instructional leadership, motivated teachers, effective use of achievement data, high-fidelity implementation of the Edison curricula, and high levels of social capital. Yet the realization of this ideal was not universal across Edison schools. With regard to the accountability mechanisms, we found that not all efforts to establish staffing authority or reduce bureaucratic control succeeded. Furthermore, in some schools, the focus on test scores embedded in Edison's monitoring and rewards strategies sparked some of the same responses to high-stakes testing and accountability systems witnessed nationally (e.g., greater attention to tested elements of the curriculum over non-tested elements, focus on the bubble kids), undermining the effort to provide a broad, "world-class" education. As for the resources and assistance offered to schools, teacher attrition at times diminished the value of investments in professional development, and not all schools took full advantage of technology for instructional purposes. In addition, many schools did not achieve the ideal model of distributed leadership and struggled to find teachers to take on leadership roles, and to find time for those who did to adequately fulfill these responsibilities.

Among the schools we visited, several factors appeared to be important in explaining some of the variation we observed. In particular,

- Strong instructional leadership by the principal was associated with stronger implementation of the curriculum, in both tested and nontested subjects.
- Among the case study schools, strong instructional leadership by principals appeared to be more prevalent in charter schools than in district schools. But charter status did not appear to be directly related to curriculum implementation.
- Local constraints, sometimes resulting from compromises required by local contracts, sometimes undermined the implementation of Edison's preferred professional environment.
- Full implementation of the Edison design took time. Schools in their first year of operation encountered frequent challenges in implementing various elements of the design. Most Edison schools that had implemented the design for several years had successfully addressed the first-year challenges and were implementing the design with greater fidelity.

We now turn to an exploratory analysis examining school-level conditions associated with student achievement trends in Edison schools.

TABLE 2
Achievement Distribution of Case Study Schools in Year of Visit Relative to Total Distribution of Edison Schools

	Math	Reading
Lowest quartile	3	2
Middle quartiles	5	7
Highest quartile	6	5
n	14	14

IMPLEMENTATION AND ACHIEVEMENT IN CASE STUDY SCHOOLS

As noted earlier, the Edison elementary schools that we examined as case studies were somewhat higher performing than Edison averages. Nevertheless, they represented a wide range of performance, including all quartiles of the Edison achievement distribution, as represented by their schoolwide proficiency gains (converted to rank-based *z* scores to permit comparability across sites using different state tests, and using the end of the 1st year of Edison operation as a baseline from which to measure gains) for the operation year in which we visited them (as shown in Table 2).[11] This range of performance provides a useful opportunity to examine school-level factors that might be related to achievement, even if only for suggestive purposes, given the small size and lack of representativeness of the sample.

First of all, we examined the relationship between our ratings of curriculum implementation and the school's achievement gain score in the year of the visit. We found that schools that did better implementing the Edison curriculum in reading and math also posted larger gains in those subjects, on the order of 0.3 to 0.5 standard deviations.[12] Given the small sample sizes involved, the differences were not statistically significant.

Of interest, however, in the case study schools, reading scores were also predicted by math implementation, and both reading and math scores were predicted by an index of the implementation of nontested aspects of the curriculum, including science, social studies, specials, and core values. Effect sizes for the relationship between implementation of nontested curriculum and math and reading test scores were on the order of half a standard deviation, which is at least moderate in size,

[11]The sample size for these analyses is less than the total number of case study schools because complete achievement data were not available for all case study schools.

[12]Similarly, Zhang, Shkolnik, and Fashola (2005) found that schools that had been implementing a comprehensive reform model for three to five years and that were rated as strong implementers achieved larger test-score gains than schools of similar vintage that were judged to be low implementing.

TABLE 3
Mean Achievement *Z* Scores by Principal Instructional Leadership, Case Study Schools

	Strong Instructional Leaders		Others	
	Z	*n*	*Z*	*n*
Reading	0.44	6	−0.23	4
Math	0.70	5	0.09	4

and substantial by the standards of education research.[13] To be sure, with simple cross-sectional correlations such as these, we cannot conclude that the relationship is causal. The correlations among the different subjects may simply result from the fact that high-performing schools do many things better than low-performing schools. Nevertheless, these results suggest the intriguing possibility that Edison schools may do better in reading and math achievement if they implement the full Edison curriculum in all of its breadth. At minimum, the results suggest that schools do not need to narrow the curriculum to promote strong achievement in math and reading.

The quality of the principal's instructional leadership appeared to be strongly related to achievement in both reading (where schools of strong principals scored higher by about 0.7 standard deviation) and math (where schools of strong principals scored higher by about 0.6 standard deviation), as indicated in Table 3.[14] Again, this is a result that might be expected (in Edison schools and non-Edison schools alike), and it is difficult to make a causal attribution. Still, the apparent magnitude of the effect is impressive, suggesting that Edison may be right to put substantial effort into identifying, recruiting, and training principals to be effective instructional leaders.

The implementation of the Edison professional environment—including the use of houses, the availability of planning time, and the prevalence of site-based professional development—was also related positively to achievement in the case study schools, with a correlation of about 0.5 in both reading and math. Schools that followed Edison's design for school organization were seeing greater student

[13]Note that this effect size cannot be directly compared to the achievement *Z*-score scale, which is standardized relative to a different distribution.

[14]We examined the relationship between instructional leadership and achievement both for the year of the visit and across all operation years (controlling for Edison-wide operation year trends), on the rationale that principal's instructional leadership might affect both the current level of the school's achievement and its deviation from general Edison trends in all operation years. Apparent effects on overall trends controlling for operation year are comparable to apparent effects in the operation year of the visit. Sample sizes in Table 3 are somewhat smaller than in other case study analyses because we lack instructional leadership ratings for a few principals (as well as lacking achievement results for some schools).

achievement gains. Again, although we cannot determine that the relationship is causal, the finding provides encouraging support for the importance of the professional environment as an integral part of Edison's school improvement strategy.

We also examined the relationships between two structural or contextual characteristics of the Edison case study schools and student-achievement effects. Because these are characteristics that tend not to change over time, we would not necessarily expect to observe an effect on achievement in the particular year of our site visit, but we might expect to observe an effect on achievement across all operation years, controlling for Edison-wide operation year trends. The first contextual variable of interest is the extent to which Edison schools operate under local contractual constraints. Edison schools that operated with more local constraints on the implementation of the Edison model had slightly worse achievement outcomes in reading trends (about 0.3 standard deviation lower, on average) and in math trends (about 0.2 standard deviation lower, on average). The second variable of interest is the principal's authority over staffing. Schools in which the principal had full authority to hire and fire teachers had slightly better achievement trends in reading (0.4 standard deviation) and in math (0.1 standard deviation). All of these differences are small (and short of statistical significance), so they should be viewed only as suggestive, but all are consistent with the view that Edison achieved better results in schools where it could fully implement its design.

IMPLICATIONS AND CONCLUSIONS

Our findings suggest several implications for external organizations choosing similar approaches to improving public schools as well as districts seeking to work with EMOs and other partners. First, there is good evidence from the Edison case study schools that principals' instructional leadership is directly related not only to effective implementation of Edison curricula but also to student achievement. Efforts to identify, recruit, and train effective instructional leaders in the principalship appear to be critical to any organization's efforts to improve the quality of teaching and learning. Other research similarly finds that principals' instructional leadership is related to the likelihood of school change and student learning (see, e.g., Leithwood, Louis, Anderson, & Wahlstrom, 2004; Waters, Marzano, & McNulty, 2003).

Second, our research indicates that multiple accountability systems may influence and in some cases impede school-level improvement efforts. In all cases, Edison's accountability system was not implemented in a vacuum but instead layered on existing state and/or local accountability systems. Edison's accountability system created additional incentives to raise test scores but included other elements of accountability as well. External organizations such as Edison and district staff

need to understand the pressures facing schools and the extent to which the goals imposed on schools by the state, the district, and Edison or other external partners are compatible with one another. For example, we heard from some Edison staff that the professional development workshops the district required them to attend often emphasized topics and goals that conflicted with what Edison expected them to do. Even when it came to achievement goals, the district's expectations could deviate from Edison's, particularly with respect to the relative emphasis placed on status versus growth measures. Administrators need to examine whether undesirable incentives are created by these multiple accountability systems and whether these incentives work to undermine improvement efforts (scenarios we did not widely observe but are clearly possible if not monitored properly). If undesirable incentives are identified, districts, for example, can work to address them through training or through modification of their own approaches for motivating and rewarding school staff.

Third, our findings, like those of other studies (Darling-Hammond, 1988, 1995, 1997; G. A. Hess, 1995; Sizer, 1992) indicate that significant change takes time. Districts partnering with external organizations cannot expect instant improvement. It is important that everyone involved in the decision to bring in an EMO or intermediary partner understand that desired results might not materialize for a few years and commit to sustained partnerships over several years. Our data also indicate that support and oversight are critical during the first year of becoming an Edison school. Although Edison provided extensive professional development, our interview participants told us they would benefit from additional, ongoing support throughout the year. The challenges of the first year were apparent in start-up schools (typically charter schools) and conversion schools (typically district contract schools) alike—ranging from difficulty implementing new curriculum to using technology to operationalizing facilities to filling leadership positions. One promising approach might be to build and strengthen interactions between staff at new schools and staff at existing, successful schools by facilitating mentoring relationships, arranging for instructional leaders in new schools to spend time in existing schools prior to the first year, and encouraging a small, select group of educators from existing schools to transfer to new schools.

Finally, it is important to interpret the findings of our study of Edison Schools in the context of other efforts to improve teaching and learning, particularly in schools facing long-term problems. These include the implementation of comprehensive school reform models (some of which are discussed in other articles in this issue), partnerships with other education management organizations and intermediary organizations, and district and state reconstitution policies. Our broader analysis (see Gill et al., 2005) examined a set of matched comparison schools, but we lack information on what kinds of reform efforts were being undertaken in those schools. There is little information yet available on whether any of these alternate approaches leads to short-term or long-term gains, or how the period required for

Edison to surpass other schools' performance compares with the time trajectories of other approaches. The results provided by this study should serve as a catalyst for additional, comparative research on Edison and other approaches to school improvement.

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