Models Matter—The Final Report of the National Longitudinal Evaluation of Comprehensive School Reform

Daniel K. Aladjem, Kerstin Carlson LeFloch, Yu Zhang, Anja Kurki, Andrea Boyle, James E. Taylor, Suzannah Herrmann, Kazuaki Uekawa, Kerri Thomsen, Olatokunbo Fashola

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Contents

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List of Figures

List of Tables

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Acknowledgments

Executive Summary
Daniel K. Aladjem

Background and Study Purpose

Tyack and Cuban (1995), in their seminal history of public school reform, described the cycles of reform over the past century. What may well be the enduring legacy of the current wave of reform is the widespread prevalence of reform solutions developed outside the formal school setting—that is, reforms developed by proprietary firms and nonprofit organizations. Some of these externally developed programs aim at single pedagogical challenges (such as reading instruction); others focus on social services (such as after school or summer school programs). The most prominent manifestation of this trend has been the advent of comprehensive school reform (CSR) models. CSR models aim to provide whole-school or comprehensive interventions that reengineer and redesign all aspects of school operations. Since the 1990s, increasing attention and research efforts have focused on these models. Although research exists on the effectiveness of many individual models, very few large-scale studies of several CSR models have been conducted.[1]

The range of activity related to CSR is impressive. Thousands of schools have implemented CSR models over the past decade, using either self-developed models or externally developed models. This breadth of activity has spawned an almost equally wide variety of research into CSR. Despite the popularity of many CSR schools and models, as well as the research base on which these models rest, the work of the American Institutes for Research® (AIR®) in reviewing this literature (Herman et al., 1999) demonstrated that, overall, research on the effects of different CSR models on student outcomes is less strong than had been assumed. Indeed, of the 24 models reviewed by AIR, only 3 had strong evidence of positive effects on student achievement. The recent meta-analysis by Borman et al. (2003) found much the same thing. By nature, researchers always think that more research is needed, but clearly, in this instance, such a recommendation for more research is at least an understatement.

In September 2000, the U.S. Department of Education awarded to AIR a grant to conduct the National Longitudinal Evaluation of Comprehensive School Reform (NLECSR) with its partners, the University of South Florida and NORC at the University of Chicago. The grant was one of five awarded under The Comprehensive School Reform Research Grant Competition. The purpose of the program is to expand understanding of the full dimensions of school reform through rigorous investigation of the large-scale implementation of research-based CSR models as a strategy for increasing student achievement.

Overview of the Study

The NLECSR is a mixed-method study using quantitative and qualitative approaches to investigate patterns of key actors' behavior, decision-making processes, and sets of outcomes. It employs a quasi-experimental design with matched treatment and comparison schools. It strives to determine the

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[1] Readers are directed to the important work of Tushnet, Vernez and Goldhaber, Turnbull, and Slavin, all of whom are actively conducting major studies of CSR (Aladjem & Borman, in press).

effects of CSR models on student achievement in about 650 elementary and middle schools (grades 3–8), by identifying the components of CSR models that are most effective overall, as well as by describing the situations and populations for which specific CSR models are most effective. The mixed-method analysis examined the contextual supports that contribute to CSR model effectiveness.

The 650 participating schools are located in 21 districts, primarily urban areas, across 17 states. NLECSR involved longitudinal surveys of district administrators (64), principals (650), and teachers (about 5,000) over the course of 3 years, as well as the collection of student record data (achievement and enrollment) for participating districts, schools, and classes.

To complement national survey data, we also conducted qualitative research in 34 schools in five districts. These qualitative case studies contribute to our understanding of both the implementation and the effects of CSR models' key components and overall model effectiveness. We observed classes to evaluate instruction; interviewed teachers and administrators about instruction, implementation, and their overall experiences with CSR efforts; and collected extant documents about reform, student achievement, and school demographics in each school.

Three research questions (RQs), focusing on outcomes and implementation, drive the NLECSR. The three major questions are:

♦ RQ 1: How effective are specific externally developed, research-based CSR models in improving the achievement of all students?

♦ RQ 2: How are model characteristics related to the success of model implementation and improvement in teaching and learning in specific types of settings and with specific types of students?

♦ RQ 3: What supporting conditions and strategies are necessary to effectively implement and sustain CSR models in schools and school districts?

We examined CSR implementation in and impact on schools, and its progression through a series of phases from adoption to implementation to sustainability. In this report, we describe (a) the process whereby schools adopt CSR models and the implications of this process for implementation; (b) the relationship between the fidelity of model implementation and changes to the reform process within schools, that is, the relationship between implementation and important outcomes such as social capital and student achievement; and (c) the sustainability of reform within schools. We have organized our findings around the major life cycle phases and major outcomes of school-level reform.

Initiating Reform

The CSR process begins with the adoption process in schools. The literature is replete with references to the adoption process. A consistent theme in the literature, moreover, is the importance of the adoption process for later implementation. Three themes emerge as most salient: the degree to which the process is *informative* (providing adequate information to stakeholders) (Bodilly, 1998), *inclusive* (enabling stakeholders to have a voice in selecting a model) (Datnow et al., 2003), and *legitimate* (ensuring that stakeholders' voices are uninhibited and unconstrained by external pressures) (Slavin & Madden, 1999). An equally consistent theme is the high frequency of the adoption process in schools not meeting these standards.

In examining the adoption process, we looked at several specific subquestions: How prevalent are specific model adoption practices? Do adoption processes appear to vary by school and/or district context? How

informative, inclusive, and legitimate—in short the quality of the adoption process—were the adoption processes—in short, what was the quality of the adoption process—in the schools we studied? Lastly, to what extent is the nature and quality of the adoption process related to later implementation levels?

Everyone Votes

Overall, it appears that voting for a model has become an institutionalized practice: in 8 of the 21 districts in our sample, *all* of the principals reported that their faculty engaged in a voting process to select their model. In 10 other districts, over 70% of responding principals reported voting. In only one district did as few as 50% of schools report voting.

To explain this high prevalence of voting, we looked both at district- and school-level factors. School size was the only factor that was significantly associated with voting. Large schools were more likely to engage in voting than small schools. However, survey data also indicate that large schools are less likely than small schools to reach a high percentage of faculty voting in favor of adoption. This is likely due to the relative ease of achieving consensus in a small school versus a large school and the relatively lower cost to large schools of voting instead of engaging in a consensus process.

Voting Does Not Equal Open Faculty Participation

The quality of the adoption process was categorized on an ordinal scale, which consisted of four categories ranging from closed to directed to guided to open adoption. Results revealed that the schools in the qualitative sample were distributed almost evenly across these four categories. The next section will provide a brief description of each of the types of adoption processes.

Closed Adoption

Schools with the lowest ratings were those in which the adoption process could be characterized as "closed." In such schools, both the information-gathering and decision phases involved few staff, the former most often included a single individual or restricted set of staff, and the latter was either a forgone conclusion or teachers had no say whatsoever. Often (but not always), there tended to be a lingering sense of negativity with regard to the adoption process in such schools.

Directed Adoption

In these schools, there was one organization or individual who strongly encouraged the school to adopt a model, most often the principal. Quite often a vote to adopt the model did occur, but it was conducted primarily because most models require a formal vote process, and thus lacked legitimacy.

Guided Adoption

In schools with guided adoption, the information-gathering phase was often quite open and inclusive, and the decision phase legitimate, but at least one key aspect of the formalized adoption process was lacking. For example, a school may have fallen short with regard to the formats through which it provided information on the model choices; instead of visiting schools and inviting model developers to visit, stakeholders may have only reviewed videos and text materials. In such schools, teachers had a generally positive recollection of the adoption process.

Open Adoption

In these schools, there was clearly a proactive engagement on the part of many staff members with regard to model adoption. The information-gathering phase was extensive, often characterized by teachers visiting schools currently implementing models, making presentations to their colleagues, actively questioning model developers, and debating a range of model choices. The decision process in the schools

was legitimate, and teachers were allowed the opportunity for dissent. In short, all aspects of the process were "open," including participation, model consideration, and feedback.

Open Processes Do Not Guarantee Implementation

While the preceding findings regarding the adoption process are of academic interest, the question of real policy importance, however, is to what extent is there an association between the openness of the adoption process and subsequent fidelity of implementation? Our survey data suggest that schools adopting CSR models through a voting process had greater school-level activity in decision making, a greater sense of clear and shared goals, higher levels of perceived usefulness of developer supports, and greater self-reported change in instruction in response to model-related professional development. Case study data suggest a relationship between the quality of the adoption process and the extent to which stakeholders understand the core components of their CSR model. The data taken together, however, also suggest a complex relationship. A closed adoption process did not preclude later buy-in and faithful implementation, and conversely, an open adoption process did not always overcome other implementation challenges. As McLaughlin (1990) noted in her followup to the RAND change agent studies, belief sometimes follows practice and "belief or commitment can follow mandated or coerced involvement at both the individual and system level."

Implementing Change

By using quantitative and qualitative data, our analysis explored how CSR model implementation varies, identified what factors predict CSR model implementation, and illustrated how well school stakeholders understand CSR model implementation as well as the contextual factors that influence their understanding.

Like most studies of CSR, this study applied both qualitative and quantitative measures of implementation. The *qualitative analysis* of implementation captured the process and comprehensiveness of implementation from the points of view of principals, teachers, and staff in a subsample of study schools. Our approach for the *quantitative analysis* was quite different. We measured implementation as *fidelity*: the extent to which the CSR model of interest was delivered to the intended recipients in the manner intended by the model's developer (Aladjem, 2003). The approach that we have developed (Kurki, Aladjem, & Carter, 2005) is based on the idea that to measure the fidelity of implementation, we must measure what schools are doing and compare that with what CSR model developers consider to be "full" implementation. The challenge of measuring implementation was finding the difference between the positive, empirical reality of school life and the normative vision of CSR model developers. We compared survey data from schools to developers' specifications for full implementation to calculate the level of implementation. For each treatment school's matched comparison, we calculated an implementation value by comparing the comparison school to its matched treatment school's CSR model. In this way we know how "model-like" practices were of our comparison schools as well as our treatment schools.

CSR Schools Do Not Systematically Have Higher Levels of Implementation Than Their Matched Comparison Schools

Surprisingly, we found comparable levels of implementation in CSR schools and their matched comparisons. The comparison schools in our sample exhibited high levels of implementation of model-like practices despite not formally implementing a CSR model. This may be due to the institutionalization of CSR practices (such as the 90-minute reading block pioneered by Success for All [SFA]), coordinated diffusion of model practices by district central offices, or organic mimetic activities of individual schools.

Implementation Varies by CSR Model

Although the study found a few significant overall differences in implementation between CSR model schools and their matched comparison schools, vast differences existed across the various CSR models concerning the implementation of different components of CSR. In other words, the level of implementation was clearly related to the "bundle" of activities recommended or required by each CSR model provider as part of the model's implementation. This effect became especially clear over time, as the relationship between level of implementation and CSR model did not vary over time. Models like SFA continued to have high levels of implementation over time. Other CSR models tended to have lower levels of implementation concerning specific components of that CSR model.

CSR Models Are Not Comprehensively Implemented

CSR is supposed to be comprehensive, addressing several dimensions of school operations (governance, professional development, assessment, and instruction, among others). The results of the implementation analyses also revealed that only about one fifth of the schools in the study implemented CSR models comprehensively in 2002, and only about one tenth did so in 2004. Regardless of these findings, overall, schools implementing a CSR model were more likely to have high a comprehensiveness level than were comparison schools, both in 2002 and 2004. The low level of comprehensiveness could be attributed to selective implementation: schools may decide to implement only particular components of the CSR program, or schools may decide to implement different components sequentially, one after another.

The Support of Key Actors Matters for Implementation

Our results also show that principals' instructional leadership, developers' assistance, and teachers' professional community were consistently and positively related to the level of implementation across many implementation indices. Similarly, English/language arts teachers were more likely than mathematics teachers to implement highly. School-level characteristics (such as percentage of students receiving free/reduced-price lunch, percentage of non-English-speaking students, and school size), although significantly related to some implementation indices, *did not consistently* predict level of implementation. These results illustrate the important role of agents (teachers, principals, model developers) in the implementation process, as opposed to the context considered by itself: CSR models can be successfully implemented in different environments if the relevant actors are engaged in the process of implementation. Another way of looking at this is to recognize the importance of school-level investment or ownership of the reform process.

Finally, the research on implementation also led to the conclusion that of all the contextual variables considered, only one was significantly and consistently associated with the change in implementation: positive change in a principal's instructional leadership increases the level of implementation. This finding again reinforces the importance of the principal's leadership in CSR model implementation. Measures for teacher community and developers' assistance were not found to predict change in implementation systematically across different implementation indices.

Improving Student Achievement

Typically the first question asked by policy makers and practitioners about CSR generally or about specific models is, "Does it work?" NLECSR examined the extent to which students in CSR schools improve on state mathematics and reading assessments relative to their peers in comparison schools.

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CSR Works When Implemented

The analysis found certain conditions under which CSR schools did experience higher academic achievement gains than their matched comparison schools. These conditions included high levels of implementation, implementing the model highly during years 3–5, and uniformity of high implementation across components. When these conditions were met, they led to significant improvement in academic outcomes, specifically in mathematics and reading. When these conditions were not met, there was no observed relationship between improvement in outcomes for CSR schools and their comparison group counterparts. In other words, the schools in both groups improved at the same rate. This relationship also was found to vary by model.

The data show a statistically significant, positive relationship between level of fidelity of implementation and student achievement. With regard to specific models, we found that schools implementing SFA showed larger gains in student achievement than other models. Interestingly, the implementation analyses also showed that SFA schools overall implemented their model higher than both the other models and their comparison group schools. One possible interpretation here is that the prescriptive nature of SFA materials and instruction result in teachers being aware of the particular steps necessary to take in order to provide high-quality instruction. This finding is particularly important when considered alongside the data that demonstrate the interplay between implementation and achievement, particularly with regard to schools implementing Accelerated Schools Project, ATLAS Communities, and Co-nect. Our analyses demonstrate that were these models implemented as faithfully as SFA, the schools implementing those models would have shown greater improvement than the schools implementing SFA. The potential effect of these models may in fact be greater than for SFA. Our empirical observations, however, are that these models were not as highly implemented as SFA.

Building Social Capital

There are many ways to classify or categorize CSR models. Typically, CSR models tend to be grouped either as prescriptive or philosophical, that is, either as models that provide highly specific guidance to schools, often around classroom instruction or as models that provide a guiding philosophy and mission around which schools organize specific activities that are consistent with the model. Many models in the latter group emphasize activities such as fostering professional community among teachers and collective commitment, two dimensions considered indicators of teachers' enhanced social capital. These models posit a view that long-term school improvement is dependent upon building social capital in schools. To test this theory, the study examined two specific questions. The first question asked, "To what extent is the growth in social capital in CSR schools associated with the implementation of externally developed CSR models?" The second question we posed was, "To what extent is social capital associated with student achievement among CSR model implementing schools?"

CSR Builds Social Capital

To examine social capital, we looked specifically at the extent to which CSR models developed a professional learning community and a collective commitment to school improvement and student achievement. We found that schools implementing either ATLAS Communities or Accelerated Schools Project exhibited greater improvement in social capital than their comparisons. This is not surprising, as both emphasize the importance of building professional communities with shared norms, values, and expectations at the core of their designs.

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Social Capital Yields Achievement Gains

Our analyses of the relationship between social capital and student achievement revealed no model effects, but did reveal a significant relationship between collective commitment and both reading and mathematics achievement. No similar relationship was found for professional learning community and mathematics achievement, though a positive, but not significant association, was found with reading achievement.

Achieving Sustained Implementation

Following "what works," the other oft-asked question of policy makers and practitioners is how to sustain CSR. To examine sustained implementation, we looked at the extent to which schools implementing CSR in the 1st year of our study maintained formal ties to their model developers over the course of our study and explanations for this sustained implementation. We then examined the change in fidelity of implementation that was associated with schools' severing of formal relationships with CSR providers.

Schools Drop CSR When Confronted by Multiple Risks

We found that less than one third of the CSR schools in our sample ended their relationships with CSR model providers during the course of our study. The remainder sustained their relationships for at least 3 years. To explore the reasons why one third of the sample severed ties with their developers, we examined 11 factors commonly cited in the literature as explanations for schools' failure to sustain CSR. These factors are: low local school capacity, lack of political support, insufficient funding, lack of positive student outcomes, poor model–school fit/alignment, instability of school leadership, faculty turnover, lack of faculty commitment, lack of model specificity, lack of sustained professional development, and competing reforms. We found that none of the factors alone had a statistically significant relationship. Instead we found that these factors operate *in combination*, and that it is the accumulation of factors, not merely the existence of isolated events, that precipitates the cessation of formal ties with model providers.

Implementation Continues Even After the Formal End of CSR

When schools did sever formal ties to their model providers, we found a remarkably small, though statistically significant, decline in the fidelity of implementation.

Chapter 1: Background
Daniel K. Aladjem
Andrea Boyle

Introduction

Tyack and Cuban (1995), in their seminal history of public school reform, described the cycles of reform over the past century. What may well be the enduring legacy of the current wave of reform is the widespread prevalence of reform solutions developed outside the formal school setting—that is, reforms developed by proprietary firms and nonprofit organizations. Some of these externally developed programs aim at single pedagogical problems (such as reading instruction); others focus on social services (such as after-school or summer school programs). The most prominent manifestation of this trend has been visible in the advent of comprehensive school reform (CSR) models. CSR models aim to provide whole-school or comprehensive interventions that reengineer and redesign all aspects of school operations. Increasing attention has been paid to these models and to research on them. Although research exists on many individual models to demonstrate effectiveness, very few large-scale studies of multiple CSR models have been conducted.

The range of activity related to CSR is impressive. Thousands of schools have implemented CSR models over the past decade, using either self-developed models or externally developed models. This breadth of activity has spawned an almost equally wide variety of research into CSR. Despite the popularity of many CSR schools and models, and despite the research base on which these models rest, the work of the American Institutes for Research® (AIR®) in reviewing this literature (Herman et al., 1999) demonstrated that, overall, less strong research exists on the effects of different CSR models on student outcomes than had been assumed. Indeed, of the 24 models reviewed by AIR, only 3 had strong evidence of positive effects on student achievement. The recent meta-analysis by Borman and colleagues (2003) found much the same thing. By nature, researchers always think that more research is needed, but clearly, in this instance, such a recommendation for more research is at least an understatement.

In September 2000, the U.S. Department of Education awarded to AIR a grant to conduct the National Longitudinal Evaluation of Comprehensive School Reform (NLECSR). The grant was one of six awarded under The Comprehensive School Reform Research Grant Competition. The purpose of the program is "to expand understanding of the full dimensions of school reform through rigorous investigation of the large-scale implementation of research-based comprehensive school reform models as a strategy for increasing student achievement."[2]

After a brief overview of NLECSR, this chapter traces the relevant history of school reform and precursor movements that led to comprehensive school reform.

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[2]   "Office of Educational Research and Improvement; The Comprehensive School Reform Research Grant Competition; Notice Inviting Applications for New Awards for Fiscal Year (FY) 2000." 65 *Federal Register* 77 (April 20, 2000) pp. 21284–21286.

Overview of the Study

The NLECSR is a quantitative and qualitative study of behavior, decisions, processes, and outcomes. It employs a quasi-experimental design with matched treatment and comparison schools. NLECSR seeks to determine the effects of CSR models on student achievement in about 650 elementary and middle schools (grades 3–8), identifying the components of CSR models that are most effective overall, as well as describing the situations and populations for which specific CSR models are most effective. We also note the contextual supports that contribute to CSR model effectiveness. The 649 participating schools are located in 21 districts, primarily urban areas, across 17 states. NLECSR involves longitudinal surveys of district administrators (64), principals (649), and teachers (about 5,000) over the course of 3 years, as well as the collection of extant student record data (achievement and enrollment) for those districts and schools.

To complement national survey data, we also conducted qualitative research in 34 schools, 24 of which were implementing CSR models. These 34 schools are located in five districts. These qualitative case studies contribute to our understanding of both the implementation and the effects of CSR models' key components and overall model effectiveness. We observed classes, interviewed teachers and administrators, and collected extant documents about reform, student achievement, and school demographics in each school.

Three research questions, focusing on outcomes and implementation, drive the NLECSR. The three major questions are:

- ♦ Research Question (RQ) 1: How effective are specific externally developed, research-based CSR models in improving the achievement of all students?

- ♦ RQ 2: How are model characteristics related to the success of model implementation and improvement in teaching and learning in specific types of settings and with specific types of students?

- ♦ RQ 3: What supporting conditions and strategies are necessary to effectively implement and sustain CSR models in schools and school districts?

We examine CSR implementation in and impact on schools, and its progression, through a series of phases, from adoption to implementation to sustainability. We describe (1) the birth of school reform, that is, the process whereby schools adopt comprehensive school reform models; (2) the design of and findings from our survey measure of implementation fidelity; (3) changes to the reform process within schools, that is, the process of implementation and the contextual factors affecting implementation; and (4) the sustainability of reform within schools. Important indicators of "school health" are also examined along the way—the relationship between model implementation and student academic achievement as well as the relationship between implementation and social capital. Thus, we employ the metaphor of a life cycle of reform. We have organized our findings around the major life cycle phases and major outcomes of school-level reform. A brief review of the research on CSR will provide a context for reporting our findings.

Towards a Theory of Comprehensive School Reform

When the CSR movement rose to prominence in the late 1990s, it was regarded as an innovative, evidence-based, cutting-edge approach to school improvement. The principles behind this movement, though—notably the use of research-based school improvement models that are comprehensive and schoolwide in nature—have their roots in over 30 years' worth of reform and research activity. In order to

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fully understand the underlying questions revolving around the school reform literature, it is important to review the literature, and explore questions that have yet to be answered satisfactorily 30 years later. The following sections explore several precursors of the present CSR movement, particularly the program evaluation and school effectiveness literature that informed the development and refinement of CSR practices as they exist today.

Precursors

Looking back nearly 40 years, three major initiatives presaged the development of CSR as we know it today: Project Follow Through, the effective schools movement, and, more recently, the work of New American Schools. The next sections outline the history of these efforts.

Project Follow Through

Initiatives to advance the use of externally developed school designs at the K–12 level can be traced back to Project Follow Through, a federally funded compensatory education program that field tested more than 20 different educational intervention models for underprivileged elementary school students. Aimed at bolstering the available evidence on effective instructional and child development practices (House, 1979; Kennedy, 1977; Egbert & England, 1992), Project Follow Through sponsored the implementation of theory-based school models in communities across the country and then assessed the outcomes of these strategies to determine which methods were most successful at improving the academic performance of disadvantaged students. The evaluation of Project Follow Through raised conceptual and methodological issues that held significant implications that resonate in the fields of program evaluation and educational research today.

Authorized in 1967 as part of the Johnson administration's War on Poverty, Project Follow Through grew out of a series of compensatory education efforts—practices designed to offset achievement-hindering factors related to poverty—that included Project Head Start, a program offering educational, social, and health services to preschool aged children as a means of increasing their readiness to attend grade school. (Haywood, 1982; Kennedy, 1977). When an evaluation of Head Start indicated that any gains it produced had disappeared following children's first year of kindergarten (Wolff and Stein, 1966), lawmakers established Project Follow Through to extend or "follow through" on Head Start by serving its preschoolers as they attended kindergarten through grade 3 (St. Pierre, 1982; Egbert & England, 1992). Although Project Follow Through was initially envisioned to be a full-scale, nationwide social services program, funding cutbacks and a transfer of the program's administrative authority to the Office of Education (OE) led to its redesign into a planned variation educational experiment that focused on a limited set of schools and districts (Haney, 1977; Egbert & England, 1992; St. Pierre, 1982; McDaniels, 1975; House, 1979; Kennedy, 1977).

Follow Through school sites were intended to select an intervention program from a set of conceptually oriented educational models and work with the developer or "sponsor" of that model to implement it in their local school communities (Egbert & England, 1992). Model sponsors, which ranged from universities to educational laboratories to commercial firms, agreed to support these implementations of their model by (1) providing technical assistance, guidance, and training to local participants and (2) monitoring and motivating their participants to ensure their implementation was comprehensive and coherent (Stebbins, St. Pierre, Proper, Anderson, & Cerva, 1977). At the height of the Project Follow Through program, some 22 different model sponsors were working with more than 170 sites nationwide, and as many as 30 additional community or parent-developed programs were also implemented over the course of the program.

Guidelines circulated by the Office of Education (OE) explained that Follow Through models should be designed to develop children's ability to learn as well as address related issues including children's self-esteem, motivation, autonomy, cultural background, and environmental support (Kennedy, 1977). Although models mostly shared this overall orientation, significant differences existed among the theories, practices, and strategies that each model embodied. The Project Follow Through evaluation (Stebbins et al., 1977) categorized the models into three groups according to what evaluators determined to be the models' main theoretical foci. Treatments dubbed "Basic Skills Models" favored a behavioristic approach rooted in the belief that all behaviors are learned and that underprivileged children fall behind developmentally and academically because they have not adequately been taught necessary social and academic skills. Examples of Basic Skills Models included the Direct Instruction model, the Behavior Analysis Model, and the Language Development model. Cognitive or Conceptual Skills Models, the second category in the evaluation's typology, were based on the theory that disadvantaged students' academic performance scores resulted from their lack of cognitive experiences typically associated with children in their age group. These models, such as the High Scope Foundation's Cognitively Oriented Curriculum, the Florida Parent Education Model, and the Tucson Early Education Model, tended to focus on using teacher–child interactions to build children's conceptual skills. Finally, models that emphasized a psychodynamic approach or the theory that achievement is closely tied to children's social and emotional growth were considered "Affective Skills Models;" the Bank Street College Model, Open Education Model, and Responsive Education Model were all considered part of this group (Adams & Engelmann, 1996).

Developing an evaluation strategy for Project Follow Through proved challenging as ambiguity concerning the program's multiple objectives clouded attempts to develop a set of universally accepted research questions. Evaluators eventually decided to focus their attention on which models or types of models produced the most gains in student outcomes (Haney, 1977; St. Pierre, 1982); however, the choice of specific student outcomes sparked considerable debate since models varied in their principal goals and intent. In the end, researchers settled on a standard battery of assessments used in the third grade, which included two cognitive or basic skills assessments and two affective assessments (Haney, 1977; Anderson, 1977).[3] To determine the project's impact on these test outcome measures, the national evaluation of Project Follow Through (Stebbins et al., 1977) employed a quasi-experimental design by comparing a population of children who participated in Follow Through projects to a similar population of children who did not. Taking individual students as its level of analysis, the evaluation traced models' assessment outcomes for four annual cohorts of students from the 1969–70 to the 1974–75 school year.

The conclusions drawn from these analyses proved to be rather controversial. Results indicated that models emphasizing basic skills, particularly the Direct Instruction model, yielded greater gains both in basic skills and self-concept outcomes than models in other categories. Students from sites whose models focused on affective or cognitive outcomes (according to the evaluation's model typology), tended to score even lower on basic skills assessments than they would have without having gone through the program. None of the model types appeared to be more successful at increasing students'

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[3] The Metropolitan Achievement Test (MAT) and the Ravens Coloured Progressive Matrices were used as basic skills/cognitive assessments, while the two affective assessments were the Intellectual Achievement Responsibility Scale (IARS) and the Coopersmith Self-Esteem Inventory.

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cognitive/conceptual scores (Stebbins et al., 1977).[4] Coloring these findings, however, was the overriding issue of site variability; generally speaking, models' effectiveness in improving student outcomes varied so significantly across different Follow Through sites that it overshadowed the variation across models, whose overall averages varied quite little.[5] Although the site-variability finding was consistent with the results of other multisite evaluations (Haney, 1977), critics cautioned that the wide differences across sites had strong implications for the interpretation of the evaluation's model-related findings. Anderson (1977) explains, "Had each model been judged by its results in one site only, and had that site been diabolically chosen, the rank order of model averages could have been almost reversed" (p. 221).

The evaluation report drew a heavy response from critics who underscored numerous methodological issues that compromised the robustness of its results. Many of these problems arose when Project Follow Through's programmatic requirements interfered with evaluators' ability to establish rigorous experimental conditions (Elmore, 1975). One of the most basic limitations plaguing evaluators was that neither the Follow Through project sites nor the models used at those sites were randomly assigned. In keeping with the program's legislative requirements, project sites were selected based on their high poverty concentrations, their capacity to administer health and social services (Kennedy, 1977), and their ability to meet Follow Through's requirement to serve a mixture of urban/rural and public/non-public schools (Egbert & England, 1992). Moreover, in an attempt to maintain traditions of local educational control, participating sites were allowed to choose which model they would implement.[6] Concern about he lack of randomization also applied to the children among individual project sites as, in most cases, schools and students in the Follow Through communities were not randomly assigned to either receive the treatment or remain in the comparison group (Egbert & England, 1992; Haney, 1977).[7]

Critics also emphasized potentially bias-creating differences between Follow Through children and their comparison group peers. They pointed out, for instance, that some treatment and comparison populations were mismatched—at times "disastrously so"—on demographic characteristics such as race and family income (Gersten, 1984, p. 412).[8] Additionally, treatment and comparison group students' initial academic preparedness may have differed systematically; the program requirement that at least half of a project's treatment group be children who previously attended Head Start meant that treatment group students were

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[4] Other model-related findings suggested that certain models were more effective when used with particular populations of children; for example, some models—Direct Instruction, Parent Education, Behavior Analysis, Bank Street, and EDC—seemed to be more effective in sites with the most disadvantaged students, and two models were consistently more successful with Head Start children. However, evaluators warned that these findings should be treated with "less certainty and generality" than the other evaluation results (Haney, 1977, p. 244).

[5] Eleven of the thirteen models with three or more sites worth of data had at least one site with a positive average effect on basic skills outcomes, while all 13 of these models had at least one site that yielded a negative average effect (St. Pierre, 1982).

[6] The Office of Education urged communities to select the model that seemed the most appropriate for their particular population and circumstances; however, some community decision-makers indicated that models were also selected because they were perceived as less demanding or more consistent with what the community was already doing (Kennedy, 1977; Egbert & England, 1992).

[7] While the decision not to randomize students stemmed largely from Follow Through's policy requirements (as the decision not to randomize sites had), randomizing students would also have raised various pragmatic challenges such as assigning and transporting children to different districts and/or schools (Egbert & England, 1992).

[8] Such mismatches might have resulted, for instance, from cases where all children participate in a Follow Through project, and the only available children to serve in the comparison group came from a different school district and/or a more advantaged socioeconomic background (McDaniels, 1975).

more likely to have received some preschool education (Haney, 1977).[9] In conjunction with these baseline differences, students in the comparison groups were also tainted by contamination effects in cases where teachers who were not officially designated to implement a Follow Through treatment may have witnessed model practices performed in other schools or classrooms, and used these strategies on their own control group students (McDaniels, 1975; Haney, 1977). Furthermore, even if the comparison group children did not encounter the practices and services of a Follow Through model, they likely received some other form of compensatory education related to Title I or other programs (Haney, 1977; St. Pierre, 1982).

Another source of contention involved how the evaluation defined and measured what the treatments (i.e. the models) actually were (Haney, 1977). Evaluators used the Basic Skills, Conceptual Skills, and Affective Skills model typology to determine whether any particular type of model was more likely to produce higher student outcomes, but some critics disagreed with these classifications, arguing that the category labels were misleading and that some models could reasonably be placed in more than one of the categories (House, Glass, McLean, & Walker, 1978). Further complicating attempts to define the model treatments was the fact that many model sponsors viewed Follow Through as a research and development endeavor, and thus refined and/or added components to their approaches over the course of the project, meaning that the treatments being evaluated in the early cohorts of Project Follow Through could have been markedly different from the treatments that were evaluated in later years (House, 1979; Haney, 1977; Egbert & England, 1992). Furthermore, although researchers made early attempts to measure schools' implementation of their models through classroom observations, in the end, evaluators had "no analytically useful record" (Stebbins et al., 1977, p. 166) regarding how extensively or faithfully sites had executed their model. Thus, treatments sites were measured only according to their model labels and classifications, which did not account for their actual dosage (Haney, 1977).

Criticism generated in response to the Follow Through evaluation quickly prompted additional studies and commentary.[10] By the time Follow Through ended in 1994, it had yielded a body of research addressing not only models' outcomes but also numerous issues surrounding evaluation and educational program design (McDaniels, 1975; Elmore, 1975; Fullan, 1983; Haney, 1977). Although some critics questioned Project Follow Through's ability to experimentally validate its models (Elmore, 1975), commentators acknowledged the program's innovation in sponsoring the development of various theoretical and research-based school models, in promoting a reform strategy where model developers engaged with local stakeholders to provide implementation assistance, and in seeking to produce evidence of models' effectiveness to inform school decision-making (Fullan, 1983; Kennedy, 1977). These activities later became a foundation for the comprehensive school reform movement, which called for the use of research-attested educational models as well as external, model-based implementation support.

Effective Schools Research

Further laying the groundwork for CSR was the Effective Schools movement, a widespread research campaign seeking to identify school-level factors associated with high student achievement, particularly among disadvantaged populations. For more than two decades, effective schools researchers investigated school conditions ranging from school culture to principal leadership to teacher attitudes and behaviors.

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[9] Evaluators did attempt to adjust for initial differences between the treatment and comparison populations, but some critics argued that these adjustments were based on unreliable criteria and had a tendency to disadvantage poorer students.

[10] See St. Pierre, 1982, and Egbert & England, 1992, for more about studies surrounding the Project Follow Through evaluation.

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The resultant body of literature served as an empirical basis for many comprehensive school reform models (U.S. Department of Education, 2002).

The Effective Schools movement emerged during the early 1970s as educational researchers aspired to counter growing doubts regarding schools' ability to make a difference in the lives of underprivileged youth. Such doubts were fueled in large part by a series of highly publicized studies (Coleman et al., 1966; Jencks et al., 1972) indicating that easily measurable differences among schools bore relatively little relationship to students' academic achievement when compared to the effects of students' family background and socioeconomic status. Some interpreted this overwhelming influence of family background to suggest that increased school improvement expenditures were unlikely to produce significant changes in student achievement since "research has found nothing that consistently and unambiguously makes a difference in student outcomes" (Averch et al., 1972, p. x). Concerned that such conclusions might lead to harmful changes in education policy and funding, researchers and activists set out to allay the growing pessimism about schools' potential impact by finding evidence that schools can in fact demonstrate higher instructional effectiveness[11] and by identifying the characteristics that allowed them to do so (Marzano, 2000; Cuban, 1998; Rowan, Bossert, & Dwyer, 1983; Bickel, 1983; Jansen, 1995; Mackenzie, 1983; Purkey & Smith, 1983).

Commentators often attribute the popularity of this research endeavor to its underlying premise that if certain schools can effectively serve disadvantaged students, then other schools who adopt their characteristics and practices can achieve similar success (Miller, Cohen, & Sayre, 1985). This notion is at the heart of the effective schools movement's ideology, which included the beliefs that (1) one can identify schools with the exceptional capacity to improve disadvantaged children's achievement, (2) these schools demonstrate manipulable characteristics associated with that capacity, (3) such characteristics can serve as the basis for improving other less effective schools, and (4) the school is the appropriate level of improvement (Bickel, 1983). Once researchers identified characteristics related to schools' success, they typically aggregated them into prescriptive lists or formulas for effective school environments.

The literature on effective school practices employed several different study designs to locate factors correlated with school success. One design that gained early popularity was the outlier study, in which researchers identified and examined schools that were unusually effective or ineffective at determining student achievement given the family and socio-economic background of its student population. Based on these categorizations, researchers used surveys and/or case studies to uncover characteristics present in schools at each end of the student achievement spectrum (Purkey & Smith, 1983; Marzano, 2000; Jansen, 1995).

Related to the outlier study was the case study approach, which involved conducting in-depth examinations of particular schools or sets of schools that met certain achievement-related selection criteria. Some of these criteria included schools' status as high- or low-performing (Weber, 1971; Ellis, 1975; Venezky & Winfield, 1979) or as improving or declining (California State Department of Education, 1980; Brookover & Lezotte, 1979) in terms of their students' reading, math, or overall achievement scores. The products of these case study investigations were often recipe-like lists of ingredients for highly effective schools, although in some cases, researchers used the case study approach to produce ethnographic portraits of what an "effective school" looked like (Jansen, 1995).

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[11] Although exact definitions of school effectiveness varied by study, most hinged upon the level or gain in achievement scores demonstrated by at-risk students (Purkey & Smith, 1983; Jansen, 1995; MacKenzie, 1983).

Evaluation studies of educational reform programs have also produced lists of school-level factors associated with effectiveness (Purkey & Smith, 1983). Program evaluations and implementation studies differed from the more descriptive outlier and case study analyses in that they examined interventions or changes in school behaviors (Marzano, 2000). As a result, these studies were interested in investigating what factors were linked to gains or losses in student achievement levels, and they featured school-level variables that were conceptually linked to the intervention program. Program evaluations tended to examine the school improvement process rather than just the effective school conditions these processes aimed to generate and thus shifted the research's emphasis "from the cover of the book to its contents" (Mackenzie, 1983, p. 6).

Over the course of the Effective Schools Movement, studies put forth numerous variables believed to contribute to schools' instructional productivity. Many of these variables addressed schools' overarching culture or climate (Halpin & Croft, 1963). For example, the research indicated that the faculty in effective schools shared common values and beliefs and agreed upon an approach to instruction (Rutter et al., 1979; Phi Delta Kappa, 1980). School staff possessed collective goals that ultimately centered on academic achievement, particularly students' acquisition of basic skills (Brookover & Lawrence, 1979; Phi Delta Kappa, 1980; Edmonds, 1982), and these goals to promote a learning-focused environment where staff "push" students to achieve (Edmonds, 1982; Stringfield & Teddlie, 1991). Effective schools' teachers devoted more time to academic instruction (Brookover et al., 1978; Wyne & Stuck, 1982; Hallinger & Murphy, 1986) and ensured that students spend their time engaged and on task (Stringfield & Teddlie, 1991; Stallings, 1980; Mackenzie, 1983). They held high expectations for student achievement (Weber, 1971; Brookover et al., 1978; Edmonds, 1982; Rutter et al., 1979; Hallinger & Murphy, 1986) and believed students would continue their education at higher levels (Brookover & Lawrence, 1979). Moreover, teachers possessed a sense of efficacy (Brookover et al., 1978; Armor et al., 1976) and participated in instructional decision-making (Rutter et al., 1979).

Most of these studies also discussed the principal's role in fostering these favorable school conditions through strong leadership. Effective school principals reportedly were knowledgeable about school curricula and assertive in making instructional decisions (Weber, 1971; Edmonds, 1982; Brookover & Lawrence, 1979). They established a vision for the school (Weber, 1971) and were instrumental in facilitating the implementation of reform efforts (Phi Delta Kappa, 1980; McCarthy, Lazarus, & Canner, 1980). Furthermore, principals actively advanced their faculty's collective expertise by promoting professional development activities, recruiting highly skilled teachers and dismissing ineffective ones, evaluating teacher performance, and engineering professional learning communities that stimulate teacher collaboration and collegiality (Stringfield & Teddlie, 1991; Phi Delta Kappa, 1980; California State Department of Education, 1980; Venezky & Winfield, 1979; Sizemore, Brossard, & Harrigan, 1983; Rosenholtz, 1985).

The intuitively appealing nature of the characteristics that many of these studies promoted helped Effective Schools research to garner rather easy acceptance among education practitioners. However, amidst the profusion of school effectiveness studies during the 1970s and 1980s, a number of reviews and critiques of this literature (Purkey & Smith, 1983; Cuban, 1983; Clark et al., 1984; Ralph & Fennessey, 1983; Rowan, Bossert, & Dwyer, 1983; Rutter, 1983) emerged from the educational research community. Although most commentators remained to some degree positive about the potential usefulness of the Effective Schools research, they expressed concerns regarding the generalizability of its findings and challenged the assumption that what works well in one school will also work well in others. Frequently, criticisms stemmed from limitations inherent in the study designs; some of the frequently cited methodological problems included small, uneven analysis samples; errors in the measures used to identify outliers; inappropriate comparison matching; a lack of control variables; observer bias; and reliance on

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nonexperimental data (Purkey & Smith, 1983; Rowan, Bossert, & Dwyer, 1983; Ralph & Fennessey, 1983).

Measures of school effectiveness used by the studies further troubled critics. For instance, researchers often declared entire schools to be effective based on achievement data from one or two grade levels or from one or two subject areas (Rowan, Bossert, & Dwyer, 1983). Some critics also challenged the research's almost sole focus on instructional outcomes as indicators of school success (Purkey & Smith, 1983; Coe & Fitz-Gibbon, 1998). They argued that a more multidimensional view of school effectiveness that included administrative, social, and emotional variables would more fully capture schools' capacity and could offer insight into how these other domains relate to achievement success (Rowan, Bossert, & Dwyer, 1983).

Finally, commentators expressed concern about how this research lacked information regarding the process by which schools can acquire the characteristics that these studies promote. Purkey & Smith (1983) noted that the research's implicit assumption that schools merely need to choose to incorporate effective school characteristics overlooked findings from the implementation literature which indicate that school change involves complicated adaptation processes. Related to the issue of how and whether schools could implement these variables was the problem of causal ordering; many of the recommended school conditions could have plausibly brought about or resulted from schools' high achievement levels, and studies were often unable to determine this relationship (Rowan, Bossert, & Dwyer, 1983; Coe & Fitz-Gibbon, 1998). Another piece that critics argued was missing from this research was the relative size of the effects produced by various school conditions. An understanding of their relative effect sizes would hold strong implications for education practitioners who, faced with limited resources, must decide which characteristics are the most essential to promote (Rowan, Bossert, & Dwyer, 1983). To address these school-change issues, critics called for a greater focus on longitudinal analyses and investigations of "turnaround" schools (Rowan, Bossert, & Dwyer, 1983).

Despite the research's limitations, findings from these studies informed the development of CSR and other school improvement models and also provided a framework for many state and local school reform efforts (Bickel, 1983; Edmonds, 1982). The movement's guiding principles—particularly its emphasis on raising student achievement, on improving educational equity for disadvantaged students, and on considering the entire school as the unit of reform—further shaped future educational policy and research (Cuban, 1998). Of particular significance for CSR was the concept of school culture or climate advanced by this literature. The notion that school characteristics interact to form a distinct school culture challenged the "view that schools are relatively static constructs of discrete variables" and instead implied that schools were complex systems in which the interplay of multiple factors contributed to student success (Purkey & Smith, 1983, p. 440). This conceptualization encouraged a move away from disconnected, piecemeal approaches to school improvement toward more comprehensive, schoolwide reform strategies (Pukey & Smith, 1983).

The New American Schools Initiative

The shift from fragmented to comprehensive, whole-school reform received a major boost in 1991 when the first Bush administration joined with business leaders to found the New American Schools Development Corporation (later, just New American Schools or NAS), a nonprofit organization intended to promote the creation and dissemination of comprehensive school reform models. Though privately funded, NAS originated as part of the President's America 2000 education reform initiative, a response to heightening concerns throughout the 1980s and early 1990s that traditional schooling methods were preventing students from meeting world-class educational standards. NAS's mission was to facilitate the

development of numerous "break-the-mold" approaches to schooling that would reinvent how schools did business through the focused use of research-based practices (Glennan, 1998; Mirel, 2001).

The cornerstone of this objective was a belief spread by the Effective Schools literature that successful schools are characterized by a "unifying design" (Berends, Bodilly, & Kirby, 2002, p. 3) that permits efficient school functioning by means of a "coherent and mutually reinforcing set of effective approaches to teaching and learning for the entire school" (Ibid, p. xv). The idea was that these "unifying designs" could be replicated in compact reform models that schools would implement with the support and guidance of the model developers and NAS. Developers would provide hands-on training to school staff in the implementation of their unique reform models while NAS would provide political and financial backing behind the scenes.

In the tradition of Project Follow Through, the NAS initiative involved a strong evaluative component. Shortly after its founding in 1991, NAS contracted with the RAND Corporation to provide research, analytic, and program evaluation support over the course of the organization's work. RAND's responsibilities were deliberately loosely defined in part to allow the flexibility needed to gauge what research would be necessary to evaluate an evolving organization and its still-evolving mission. RAND's tasks included documenting how design teams' approaches changed over time, determining schools' level of model implementation, pinpointing factors that facilitated or inhibited implementation of CSR models, and evaluating whether adopting a model produced desired student outcomes. More broadly, RAND's work involved articulating and assessing the validity of the theories underlying the NAS enterprise as well as its overall contribution to the field of school reform (Berends, Bodilly, & Kirby, 2002). Ultimately, RAND published more than a dozen official reports about NAS's mission and its outcomes. Numerous other working papers and policy briefs were also released, and RAND's body of work on the NAS project became one of the major repositories of research on comprehensive school reform during the mid- and late 1990s.

NAS's planned distribution of wholesale CSR models comprised four distinct phases: design selection (1992), development (1992–93), demonstration (1993–95), and scale-up (1995–98). In the selection or competition phase, the organization solicited proposals for the creation of these new models (or "unifying designs") that could be delivered to schools as packaged reform strategies. In addition to the requirement that they be replicable across a large number of schools, models needed to be innovative, affordable, suitable to all student subgroups, and adaptable to local district and community contexts (Bodilly, 2001). Out of over 600 proposals, 11 CSR models were selected in the competition phase. They were ATLAS Communities; Audrey Cohen College; Bensenville (Illinois) New American Schools Project; Co-nect; Community Learning Centers; Expeditionary Learning/Outward Bound (ELOB); Urban Learning Centers; Modern Red Schoolhouse; America's Choice; Odyssey Project; and Roots and Wings. The year following the competition constituted NAS's development phase during which the chosen model developers honed the programmatic content of their models and prepared them for implementation in schools. By the end of this second phase, NAS had abandoned its two locally developed designs, the Bensenville and the Odyssey Project, due in large part to community disagreements and funding issues, but also because their local orientation clashed with NAS's increased focus on nationwide scale-up (Berends, Bodilly, & Kirby, 2002; Mirel, 2001).

NAS's third stage was a demonstration phase in which the nine remaining teams piloted their designs in two or more schools and made further adjustments to prepare their models for duplication in multiple settings. The demonstration phase also saw the publication of RAND's first major reports. NAS had requested that RAND conduct formative assessments of the design teams' work during the initiative's early phases to keep stakeholders apprised of their progress and to identify pertinent lessons learned that

would inform the future scale-up process (Bodilly et al., 1996; Bodilly et al., 1995). In response, RAND performed comparative case studies of the design teams to investigate such matters as how essential characteristics of the models and design teams affected their progress toward NAS's goals, whether the teams had effective strategies for implementation assistance, and what obstacles needed to be addressed to achieve successful scale-up (Bodilly et al., 1996).

With respect to the models themselves, these reports indicated that (1) the nature of the designs largely varied from one another and (2) the designs changed significantly over the course of the initial three phases. Such changes were attributed to planned development from design teams, school-level adaptation of the designs to meet the needs of teachers, and other modifications in response to school, district, and/or state policies (Bodilly et al., 1996; Bodilly, 2001). These observations of model characteristics had implications for schools' ability to fully implement their models as the nature or type of model was associated with the variation in schools' implementation. Other factors related to design teams' success in demonstrating full implementation of their models included the teams' preparedness at the start of the initiative as well as the implementation strategy they employed in schools (Bodilly et al., 1996).

An examination of the design teams' implementation strategies during the demonstration phase revealed the importance of design-based assistance (Bodilly, 2001). To underscore the significance of this developer support, future RAND reports referred to what were formerly called "design teams" as "design-based assistance teams" (Bodilly, 2001). RAND's investigation into which aspects of design teams' assistance strategy helped improve implementation progress in schools produced five major themes: (1) an inherent vision that guides school staff, (2) an implementation strategy that "guides the sequencing of tasks" and implementation assistance, (3) progress assessments and associated mechanisms for adjusting efforts based on assessment outcomes, (4) resources sufficient to implement change over a relatively short period, and (5) ongoing professional development in content related to model implementation.

In addition to this developer assistance, it became clear to NAS that implementing reform models entailing substantial changes to nearly every aspect of the school enterprise required strong support from district administrators (Bodilly et al., 1996; Bodilly, 2001). Comprehensive school reform simply involved too many drastic changes for individual schools to manage successfully without assistance and a wide delegation of authority from local administrators. In light of their observations in that respect, NAS chose to adopt a "concentration strategy" for its nationwide scale-up, rather than promulgating CSR models indiscriminately and risking failure in districts uncommitted to these reform efforts. Instead, NAS would partner with a limited set of school districts with an eye toward implementing CSR in a high percentage of schools (Berends, Bodilly, & Kirby, 2002). RAND theorized that the presence of effective designs and assistance strategies to implement them would exert subtle pressure on school districts to delegate authority to schools to make the models work.

The nationwide scale-up, the fourth and final phase of the initiative, officially lasted from 1995 until the academic year ending in 1998 and represented the true launch of NAS's plans to expand the number of CSR models in low-performing districts. Seven design teams[12] were selected to transmit their model to a wider sample of schools. In accordance with its concentration strategy, NAS focused its scale-up in 10 under-performing districts,[13] each of which committed to involve at least 30% of its schools in the

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[12] These were ATLAS Communities; Audrey Cohen College; Co-nect; ELOB; Modern Red Schoolhouse; America's Choice; and Roots and Wings.

[13] These districts included Cincinnati, OH; Dade County, FL; Memphis, TN; Philadelphia, PA; Pittsburgh, PA; San Antonio, TX; San Diego, CA; and smaller districts in Washington State.

initiative. The individual schools chosen to implement NAS designs typically scored below the district average on state assessments and tended to serve high-poverty and often high minority student populations (Berends, 1999).

To assess and document the NAS scale-up process, three major research projects were undertaken that formed the core of RAND's investigation into NAS and CSR. These were a longitudinal study of implementation and performance (Berends et al., 2001; Kirby, Berends, & Naftel, 2001; Berends, Bodilly, & Kirby, 2002), case studies of implementing schools (Bodilly, 1998; Bodilly & Berends, 1999; Chun, Gill, & Heilbrunn, 2001), and a detailed classroom study in San Antonio, TX (Berends et al., 2002). In general, RAND focused on two variables throughout its analysis of NAS: model implementation and student achievement as a result of model exposure. RAND primarily explored the extent to which models were adopted in the schools and districts affiliated with NAS and what contextual factors impacted the extent of implementation. It also investigated whether or not student achievement gains were realized as a result of model adoption.

RAND developed two implementation indices with which to measure schools' implementation of the NAS designs: one index measured the broad changes believed by NAS to be common to each reforming school, and a second index measured design-specific changes, taking into account variations between schools and districts flowing from different emphases and approaches used by each model. The longitudinal analysis of NAS scale-up schools showed modest overall gains in implementation between 1997 and 1999. Schools' implementation levels tended to increase during the initial 4 years after adopting a model but decreased in the years that followed. Implementation levels varied largely by school, school district, and NAS design. Moreover, the within-school variance of schools' implementation levels exceeded the between-school variance and increased over time, indicating that models were not implemented schoolwide. Factors influencing implementation included the NAS designs themselves, model-specific technical assistance, schools' model selection process, district context, and schools' capacity and context. (Berends, 2000; Berends et al., 2001; Kirby, Berends, & Naftel, 2001; Berends, Bodilly, & Kirby, 2002).

Regarding student achievement outcomes, an analysis of 163 design-implementing schools revealed that of the schools, half made gains in mathematics in comparison to other schools in the district, while 47% showed gains in reading. Researchers found evidence indicating that strong principal leadership was associated with higher student achievement; however, the instructional practices prescribed by the NAS designs were not significantly related to student achievement in comparison to other school- and classroom-level conditions. Schools' generally low implementation levels might explain this lack of an effect (Berends et al., 2002; Berends et al., 2001; Kirby, Berends, & Naftel, 2001; Berends, Bodilly, Kirby, 2002).

Reflecting on the NAS initiative's legacy for future educational reform, RAND evaluators acknowledged the organization's role in fostering the development and widespread use of numerous comprehensive school reform models. They further recognized NAS's emphasis on sponsoring research and evaluation work related to this enterprise. The literature resulting from the NAS initiative not only provided evidence of NAS models' effectiveness, it also yielded several lessons about the reform process that could be applied to later efforts. For instance, RAND's evaluation reports focused attention on the district- and school-level context for reform. They questioned the feasibility of implementing complex, nontraditional designs in what were often highly regulated, low-capacity schools and stressed the importance of addressing school and jurisdictional conditions that could inhibit model implementation. Moreover, to avoid complications related to the reforms themselves, RAND's reports cautioned model developers

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against prematurely taking their models to scale before the reform design and implementation strategy were clearly defined and tested.

Furthermore, the NAS evaluations underscored the need for schools to receive design-oriented technical assistance to facilitate their implementation of external interventions (Berends, Bodilly, & Kirby, 2002). Although the use of design-based assistance already had a long tradition in the field of education reform, NAS's innovation resided in the fact that it "deliberately set out to develop a variety of design-based assistance organizations with which schools can affiliate . . . [and] invested not only in creating the designs themselves but also in developing organizations and their strategies for engaging and assisting schools to implement their designs" (Glennan, 1998, p. 23).

Title I and the Comprehensive School Reform Demonstration Program

The federal government's largest role in advancing comprehensive approaches to school reform involved a series of Title I policies that encouraged and financed the implementation of whole school reform strategies. Under the 1994 reauthorization of the Elementary and Secondary Education Act (ESEA), the federal Title I program, which offered schools resources to assist disadvantaged students, included provisions allowing schools in which at least 50% of the student population qualified for free or reduced-price lunch to use their Title I funds to support the implementation of schoolwide reforms. These provisions arose amidst concerns that the pull-out approach employed by Title I's predecessor, chapter 1, was distracting at-risk children from their school's curriculum by removing them from the classroom and providing supplemental instruction that was not always aligned with the regular school day curriculum. The schoolwide provision of Title I extended its services to all students, promoting a consistent and proven approach to instruction across the entire school population. Since comprehensive school reform models were deemed an acceptable use of these funds, it is not surprising that CSR soon experienced its most rapid growth among Title I Schoolwide schools (Slavin & Fashola, 1998).

As CSR models' popularity grew in response to the NAS initiative and the Title I Schoolwide program, federal lawmakers endeavored to bolster this reform strategy by alleviating the potentially prohibitive cost of CSR models and developer assistance. In 1997, Congress established the Comprehensive School Reform Demonstration Program (CSRD),[14] which provided schools and districts with grants of at least $50,000 that were renewable for up to 3 years. Intended to serve as "start-up" funds to initiate schools' CSR work, these grants were administered by SEAs through a competitive process that focused on CSR proposals' ability to meet nine federally required components: (1) the use of proven, scientifically based methods and strategies; (2) a comprehensive design with aligned components; (3) a professional development strategy; (4) measurable goals and benchmarks; (5) support within the school; (6) parental and community involvement; (7) external technical support and assistance; (8) annual evaluations; and (9) coordination of resources. Four years later, this funding stream was renamed the Comprehensive School Reform Program and was incorporated into the No Child Left Behind (NCLB) Act (2001) as Title I, Part F. NCLB mandated two additional components: (1) schools were required to locate resources to sustain their CSR work after the 3-year funding cycle, and (2) proposed CSR models needed to have strong evidence of their ability to improve student achievement.

Additional CSR Research

While RAND's analyses of the NAS initiative provided one of the few large-scale evaluations of multiple CSR models, numerous other CSR studies soon followed as the reform's growing popularity increased demands for research-based support strategies and evidence of CSR models' effectiveness. For the most

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[14] CSRD grants also became known as "Obey-Porter" funding after the appropriations bill amendment that authorized the program.

part, these CSR studies were more focused or limited in scope. Some investigated specific district or state CSR efforts such as the Memphis Restructuring Initiative (Ross et al., 2001; Smith et al., 1998; Stringfield & Ross, 1997), the Comer Schools and Families Initiative in Detroit (Millsap et al., 2000), and the court-mandated use of CSR in New Jersey's Abbott districts (Erlichson & Goertz, 2001). Other researchers probed CSR's implications for special school settings such as rural locales (Carlson & Buttram, 2004) and multicultural communities (Datnow et al., 2003) or for special student populations such as English language learners (Hamann, Zuliani, & Hudak, 2001; Berman et al., 2000; Menken, 2000) and students with disabilities (Jurich & Duffy, 2003; Purnell & Claycomb, 2001).

A large proportion of CSR research focused on the outcomes of a particular CSR model. These studies included evaluations conducted by model developers themselves such as Slavin and his colleagues' publications on Success for All (SFA) (Slavin et al., 1996; Slavin & Madden, 1999) and Comer and his associates' reporting on the School Development Program (Haynes, Emmons, & Woodruff, 1998; Comer, 1998; Haynes, Comer, & Hamilton-Lee, 1988). They also included several independent evaluations of CSR models like the Accelerated Schools Project (Bloom et al., 2001), Co-Nect (Ross & Lowther, 2003), the School Development Program (Cook, Hunt, & Murphy, 1999), America's Choice (Supovitz & May, 2004), Core Knowledge (Datnow, Borman, & Stringfield, 2000), Coalition of Essential Schools (Muncey & McQuillan, 1993), and Talent Development (Kemple, Herlihy, & Smith, 2005).

CSR Model Reviews and Research Syntheses

As CSR studies proliferated and federal policy began to focus increasing attention on researched-based and scientifically proven practices, several reviews emerged to guide practitioners' use of the burgeoning CSR research. Slavin and Fashola (1998) sought to discourage schools and districts from making reform decisions according to "the pendulum swings of current fashion" (viii) and urged the education community to instead select strategies based on their record of effectiveness and replicability. To facilitate such a decision-making process, they summarized the available research on numerous schoolwide reform programs and described strategies for supporting the school change process.

In 1999, AIR released *An Educator's Guide to Schoolwide Reform* (Herman et al., 1999), which examined the existing evidence surrounding 24 popular reform models' effects on student achievement. Using a consistent set of standards, this study rated and compared models according to their reliable evidence of effectiveness. The study demonstrated that, overall, less strong research on the effects of different CSR models on student outcomes existed than had been assumed. Of the 24 models AIR reviewed, only 3 had strong evidence of positive effects on student achievement: Direct Instruction, High Schools that Work, and SFA.

The recent meta-analysis by Borman and colleagues (2003) confirmed this weakness in the research base, concluding that although CSR did appear to have promising effects on student outcomes, some of the available research may have overstated the size of these effects. They expressed particular concern over CSR evaluations that employed less rigorous study designs as well as evaluations conducted by model developers and argued that independent, experimental or quasi-experimental studies were likely to generate more objective, reliable results.

OERI Research Grants

As noted above, in September 2000, the U.S. Department of Education awarded to AIR a grant to conduct the NLECSR. The grant was one of six awarded under The Comprehensive School Reform Research Grant Competition. The following section describes the approach we took to this evaluation.

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Conceptual Framework

The study design (described at length in chapter 2) follows the research questions originally promulgated in the Federal Register notice announcing the grant program. To address these questions, we developed the conceptual framework depicted in Figure 1.1.

We have characterized this framework as a life cycle model. Through it, we examine the implementation and impact of comprehensive school reform from the time schools first initiate and adopt CSR, through implementation, to student achievement to long-term sustainability. Along the way, we investigate the roles of states and districts in supporting CSR, as well as the influence social capital has on student achievement.

Figure 1.1. Conceptual framework
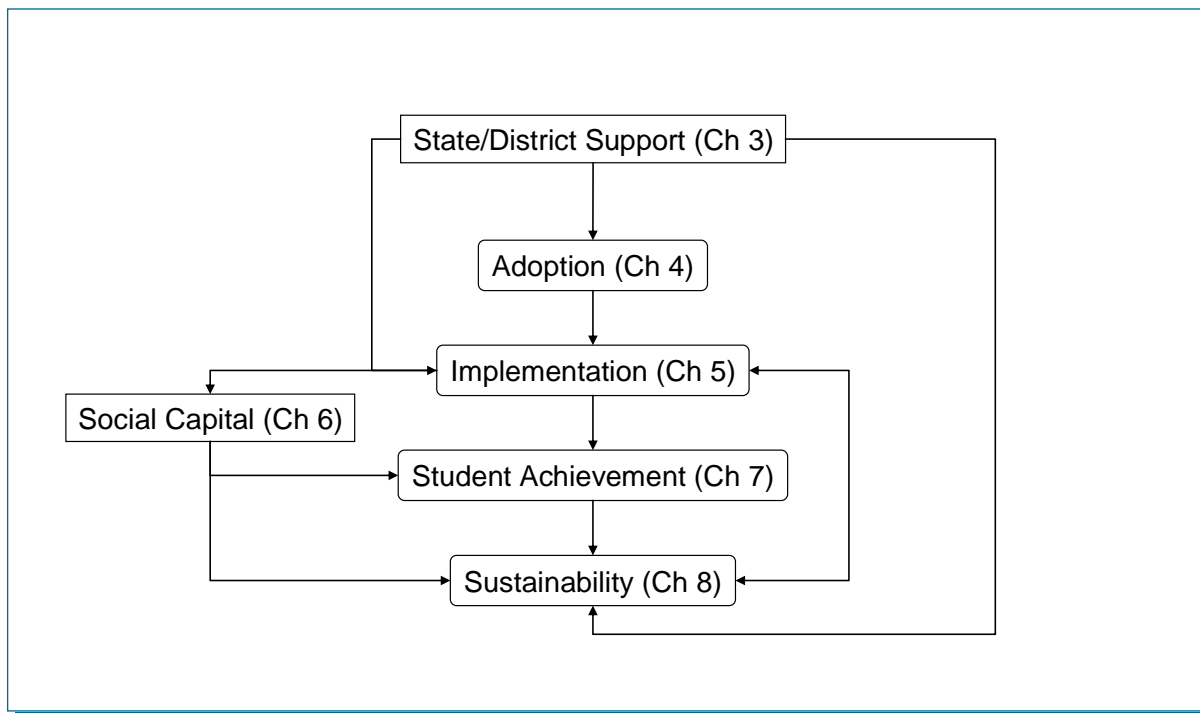
Organization of This Report

The purpose of this chapter has been to provide a quick introduction to the study and important background for the work we have conducted. The remainder of this report will describe the methods used (chapter 2), the state and district context for CSR (chapter 3), the adoption process (chapter 4), implementation of CSR (chapter 5), the role of social capital (chapter 6), student achievement gains (chapter 7), and the sustainability of CSR (chapter 8). We conclude with some brief policy implications and recommendations.

Chapter 2: Study Design

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Introduction

This chapter provides an overview of the study design. Details of particular analyses are provided in each chapter with additional detail provided in the Technical Appendixes.

We designed the study to address the very broad and all-encompassing questions posed by the federal government (described in chapter 1). We began with certain assumptions about the best way to address such a broad range of questions in a single study. These assumptions were that the study should:

♦ Employ a quasi-experimental design;

♦ Use both qualitative (case study) and quantitative (surveys and extant data) methods;

♦ Examine multiple, externally developed CSR models (not just one or two models); and

♦ Account for the role we assumed local school districts play to the greatest extent possible.

To study multiple models, we selected eight prominent CSR models that cover the spectrum of approaches to comprehensive school reform, from highly scripted to more philosophical. In alphabetical order, the models were: Accelerated Schools Project, ATLAS Communities, Co-nect, Expeditionary Learning/Outward Bound (ELOB), Modern Red Schoolhouse, Success for All (SFA)/Roots and Wings, Turning Points, and Urban Learning Centers. Our expectation was that these models were so concentrated in urban areas that we would be able to select a sample of schools implementing these models in a sample of the largest districts. To do this, we requested and received rosters of schools implementing each model from each model provider. We discovered that these models were not as concentrated in large urban districts as we and the model providers had thought. Consequently, we expanded the scope of our district sample and ended up with unequal numbers of schools per model in each district. We maintained a sample of schools nested within districts because of our belief and the body of literature suggesting the importance of accounting for district variation. In addition to the eight models selected, we also created a ninth category consisting of schools not implementing any of our eight models, but receiving federal CSR funds in our sample of districts.

To answer our research questions, we drew upon three sources of data: survey data, case study data, and extant achievement data. We describe the use of each next.

Survey

We collected survey data over 3 years, from 2001 to 2004, from principals and district officials using self-administered, paper-and-pencil questionnaires the first year and telephone surveys in the last 2 years. One principal per school and 3–4 district officials per district were sampled. In addition, teachers completed self-administered paper-and-pencil questionnaire in the 1st and 3rd years of data collection. Approximately 10 teachers per school were sampled. AIR subcontracted with NORC at the University of

Chicago to collect the survey data. AIR developed all survey instruments. AIR and NORC jointly designed and selected the school and student sample.

District and School Sampling

AIR and NORC defined the universe file of possible treatment and control schools for NLECSR using the U.S. Department of Education's 1999–2000 school year Common Core of Data (CCD) file. AIR and NORC identified potential treatment schools by obtaining lists of member schools from each of the eight CSR model providers. The models selected included Accelerated Schools Project, ATLAS Communities, Co-nect, Expeditionary Learning-Outward Bound, Modern Red Schoolhouse, Success for All, Turning Points, and Urban Learning Centers. These were selected because they were among the most prominent models nationally. They also represent a range of approaches to comprehensive school reform. AIR and NORC proposed and implemented a "ninth stratum" classification to include CSRD schools implementing a model other than one of the eight original models.

District Selection and the Master Database

NORC and AIR jointly decided to restrict the sample to schools from the districts with the largest numbers of CSR schools. The primary reason for this decision was our interest in urban education. We also wanted to keep treatment–control comparisons within districts so as to yield more valid comparisons than cross-district comparisons would allow. Additionally, larger districts improved the odds of finding well-matched treatment and control schools within a district. Several studies sponsored by the U.S. Department of Education (ED) focused on evaluations of comprehensive school reform, and in order to avoid multistudy participation at the school level, ED solicited MPR (a research organization) and NORC to maintain a "master database" (referred to as MDB) of ED-funded grant-based studies as well as several contract studies being conducted under contract from ED in the fall of 2001. The MDB aided the selection of districts and flagged any potential collisions, that is, a school targeted for more than one study. After "collisions" were identified, all grantees and contractors involved negotiated district and school participation based on their respective sampling frameworks, the importance of school factors/models and geography among other criteria.

School Selection

The goal of the matching procedure was to pair each CSR ("treatment") school with a non-CSR ("control") school within the same school district, one which resembled the CSR school as closely as possible in terms of factors related to the main dependent variable of the NLECSR project, student achievement gains. NORC relied on measures of student socioeconomic status and race/ethnicity. Within districts, the grade span offered by each school constrained the pool of controls eligible to be matched with each treatment. As a result of grouping schools by grade span, not all control schools would have a chance to be matched with all treatments. Treatment and control schools were matched using cluster sampling in terms of a "Euclidean distance" measure.

In each selected district, NORC and AIR selected the treatment schools with certainty based on the CSR model adopted by the school. The eight focal CSR models constituted eight strata in the treatment sample; in addition, schools with a federal CSR grant and a CSR model other than one of the focal models form a ninth stratum in the treatment sample. The control population includes all schools other than those drawn into the treatment population, with the exception of schools considered out of scope (OOS) (typically for the reason of covering the wrong grades). Only schools in the 48 contiguous states and schools with at least two grades in the 3–8 range were eligible for NLECSR.

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Gaining Cooperation

Initially, a formal and lengthy phase of gaining cooperation was not explicitly detailed in the NLECSR plan. As the study commenced, NORC planned to send a notification letter to the district and school offices introducing officials to the NLECSR and then have minimal phone follow-up by field staff to answer questions or address concerns. During the initial stages it became clear that gaining cooperation at both the district and school level involved more of an official approval process and considerably more field effort and prompting than expected, as will be outlined below. Before the start of gaining cooperation, NORC IT staff assigned NORC IDs (SUIDs) to all districts and schools. These IDs were unrelated to any IDs assigned by any other organization or government agency in order to maintain confidentiality. Throughout the gaining cooperation process and all three data collection rounds, NORC maintained a toll-free number and e-mail account for study participants to contact with questions.

District Cooperation

In late June 2001, after sending notification letters to state officials, NORC sent via FedEx an advance package to each of the 22 districts selected for the NLECSR. This package included a personalized advance letter and a brochure giving a brief overview of the NLECSR. The Superintendent and Title I Coordinator in each district office received this district cooperation package. In late June 2001, trained NORC field managers who followed up on the advance letter by phone, answered any questions from the district officials to whom they spoke, and inquired about any prerequisites to district approval.

One step involved at the district level not detailed in the study proposal was the requirement of a "research clearance package" at some district offices. A combination of generic clearance package submissions, complex and personalized packages, and verbal discussions with various staff at the district level resulted in 21 out of 22 districts granting permission to AIR and NORC to approach schools in their districts. After districts gave their verbal consent or approval of the submitted research clearance package, field staff obtained a signed consent form from each district. The length of the entire process of Gaining Cooperation at the district level varied greatly. The last district came on board in January 2002, overlapping with the gaining cooperation phase of previously released districts' schools.

Endorsing Agencies

During the district gaining cooperation period, NORC staff also worked on gaining the endorsement of several education-related agencies. NORC displayed the names of the four endorsing agencies on the back of the brochure used for the school gaining cooperation phase of the study. The endorsement letters served also as a part of an approach for difficult or refusal districts and schools. Field staff shared the letters with such schools and districts as substantiation of the credibility of the NLECSR.

School Cooperation

Since the 21 districts agreed to participate in a period of time spanning from early summer 2001 through the beginning of 2002, NORC released the schools from these districts for gaining cooperation in waves. The first mailing occurred in September of 2001 and the last in January 2002. After the initial mailing, NORC released schools as soon as districts granted permission, whether verbal or written, and released entire districts at a time. Districts that employed a structure incorporating regional districts were exceptions. In these districts, NORC mailed to all treatments in the consenting regions and only controls for treatments already released as regional districts granted consent. Across the nine model strata and control schools, 1,084 schools were released into the gaining cooperation phase and 649 came on board and subsequently entered the first data collection round. During gaining cooperation, 26 schools sampled for the NLECSR were found to be OOS.

NORC mailed a letter, brochure, roster memorandum, agreement letter form, and business reply envelope (BRE) as part of the initial school package addressed to the school principal. A few districts, as part of the consent stipulations, also requested that NORC send schools a copy of the signed district consent letter and/or approved research clearance package. The "roster memo" included in the package stated the request from schools of a school roster of teaching staff with subject and grade indicated along with full teacher names. In addition, it specified the types of teachers to be included: grades 3–8, teaching either mathematics or English/language arts (or both).

From the national pool of NORC field interviewers, NORC central office staff trained 30 field interviewers with experience in school or similar institutional studies and good refusal conversion skills. Four field managers supervised the field interviewers and worked with central office staff on approaches and any difficult issues that arose. Training of field staff occurred in waves to coincide with the release of districts assigned to the interviewers. Field staff commenced school phone prompting in September of 2001 and continued their efforts through January 2002. Much of the gaining cooperation work was done over the phone, though several schools received in-person visits from NORC field staff. Field interviewers worked with central office staff to formulate approaches and focus efforts and addressed principals' questions and concerns. Central office staff, through the monitoring of the case management system and weekly calls with field managers, produced analyses of schools prioritizing schools implementing certain models and certain vital treatment–control pairs.

In addition to prompting for written consent and rosters, field staff also requested information such as school calendars and the name of an appointed NLECSR coordinator in the school to utilize as a primary contact during data collection. With the help of the NORC case management system and field staff, NORC singled out schools for special refusal conversion letters (late 2001) and prompting letters (January and February 2002) or in-person visits (January 2002) to obtain agreement letters and teacher rosters. While the majority of school cooperation ended in late January and staff consolidation occurred, NORC staff continued to prompt for agreement letters and rosters.

Rostering and Teacher Sampling

Rostering

As mentioned, NORC collected teacher rosters from schools agreeing to participate in the NLECSR. Schools sent in their hard copy rosters via USPS (using NORC-supplied BREs), e-mail, or fax. All were receipted in the NORC production center and subsequently "preedited," and data were entered into a roster data-entry system. Preediting by trained NORC staff was required so that only teachers in scope per the sampling rules of the study were data-entered and sampled. While NORC requested an up-to-date roster of teaching staff identifying grade and subject area(s) taught, many "rosters" included all school staff (e.g., administrators and maintenance workers) as well as OOS teachers (e.g., kindergarten-level teachers and special education teachers). Trained NORC staff crossed out all staff other than teaching staff in grades 3–8 who taught either mathematics or English or both subjects. IDs were also assigned at this time. These NORC-assigned SUIDs were unrelated to any school-assigned staff ID rosters may have contained.

Teacher Sampling

School respondents selected for participation in the NLECSR, not including principals, included all general classroom teaching staff (excluding special education and English as a second language staff) who fit the parameters of (1) teaching grades 3, 5, 6, and/or 8 and (2) either taught "all subjects" (or "generalists," as most lower grade classroom teachers are), or were specifically mathematics or English/language arts teachers. Where NORC knew the subject-specific area for a teacher from the roster,

NORC assigned one of two versions of the questionnaire (either English/language arts or mathematics) to that teacher. Where the subject area of a teacher was perceived to be "general or all subjects," NORC implemented a random assignment process to determine the questionnaire version for these cases.

For those schools where NORC field staff received a verbal consent but did not receive a roster in a timely manner, NORC implemented an imputation process. A description of this process is available in the data collection section below.

Round I Data Collection

The data collection phase of the first round of the study began in January 2002. This phase overlapped with the gaining cooperation phase for a few weeks as NORC worked to secure final approval to approach the selected schools in the few remaining districts. The NLECSR encountered significant changes in the mode of implementation from the proposal stage of the study to when the study actually entered the data collection stage in early 2002. Originally, the project proposal envisioned the following assumptions that changed once concrete preparation began: little to no field follow-up or financial incentives required, and the employment of telephone interviewing as the primary mode of data collection. Ultimately, the project evolved to include a self-administered paper and pencil questionnaire, monetary incentives for participating teachers and school coordinators, coupled with extensive field follow-up, both by phone and in person. These changes were for the most part due to the fact that NORC would not be able to contact teachers directly via phone. Teachers often do not have direct phone access at school and schools would not likely give out teachers' home phone numbers.

Questionnaire Development

AIR and NORC finalized all three of the primary NLECSR questionnaires and arranged for printing. The three types of questionnaires for school respondents were principal questionnaire, teacher questionnaire—English/language arts version, and teacher questionnaire—mathematics version. A district official questionnaire was also developed and printed; however the quantity was significantly lower than for the school respondents.

School Mailouts

NORC released a given school district's schools into data collection based on the percentage of schools from which NORC had received and data-entered a complete teaching staff roster. The earliest were mailed in late winter 2002 and the last were mailed in late spring 2002. NORC sent packages including the principal questionnaire and teacher questionnaires to the designated school coordinator or principal (when a school coordinator had not been designated during gaining cooperation) at each school. The NLECSR opted to send all mailings to schools by overnight FedEx delivery to ensure quick receipt of materials and easy online or phone tracking of packages. NORC production center staff placed the following materials in each individual presentation envelope: a cover letter describing the study and participatory incentives, an individually labeled questionnaire, an NLECSR brochure, and a prepaid first class BRE. All presentation envelopes and questionnaires were labeled with the respondent's name, grade level, questionnaire version, teacher or principal identification number, and school identification number. Finally, a school coordinator letter outlining directions for distribution, a school coordinator incentive form, and a BRE was placed on top of the prepared principal and teacher presentation envelopes prior to being placed in the FedEx Pak/box.

Imputation Cases

During the gaining cooperation phase of NLECSR, a number of verbally consenting schools submitted only part of the necessary paperwork. Despite a number of follow-up attempts to retrieve the missing

paperwork throughout the final weeks of the gaining cooperation effort, several schools did not submit rosters listing active teaching staff in a timely manner. Using data from the CCD, NORC sampling staff imputed the number of teachers in these schools and sampled using this data. The two imputation mailings occurred in early and mid May 2002 and included approximately 60 schools. Assignment of questionnaires and IDs to teachers was facilitated by field interviewers, either in person (the majority) or by phone.

District Official Mailout

In spring 2002, NORC mailed questionnaires to officials at each of the 21 participating school districts. Previously, AIR had decided to sample three respondents in each of these districts, selecting staff working in the following capacities: superintendent, director of curriculum and instruction, and Title I coordinator. To the degree that it was possible, NORC staff found the appropriate persons occupying those positions in each of the participating districts. In a few districts, due to the nature of overlapping job descriptions and titles, NORC and AIR selected an additional district official respondent. District respondents received a cover letter, properly labeled questionnaire, brochure, and BRE for the questionnaire's return.

Field Contacting

During the course of the data collection phase for Round I, over 30 field interviewers, located in the 17 states in which districts were sampled for the NLECSR, contributed their efforts to secure the maximum benefits and results for the NLECSR. For the most part, NORC field interviewers were the first personal contact with many of the teachers for the NLECSR, although all principals involved had previous contact with NORC field staff by phone during the gaining cooperation phase. Interviewers were trained by phone in waves as schools entered the data collection phase of the study, from March 2002 through April 2002. NLECSR field interviewers proved successful in accomplishing the following tasks, either by phone or via in-person visits:

- Following up with those schools (after they had received their questionnaire and prompting mailings) deemed by AIR or the NORC central office to be priority schools and/or having low response rates;

- Working with gatekeepers and/or a predesignated NLECSR school coordinator to prompt for questionnaires in person for teacher and principal respondents;

- Answering any questions that arose;

- Obtaining a letter of consent from schools (when applicable);

- Securing teacher rosters (when applicable, for schools who consented to participate in the NLECSR but did not return a roster to NORC during the gaining cooperation phase; these schools were not released into data collection until a roster was received or an imputation process was completed.); and

- Coordinating between the schools, principals or teachers, and the NORC field managers.

For four districts where NLECSR staff was unable to staff field interviewers because of geographical constraints to visit participating schools in person, NORC staffed field interviewers to follow up with teachers and principals by phone. Fortunately, the field interviewers responsible for contact with these particular school districts proved to be highly effective in refusal conversion and other important strategies. Furthermore, the response rates for these districts are also indicative of the high level of school to field interviewer and field manager contacts through this medium.

Also as a part of the field phone follow-up efforts, toward the very end of the data collection phase, a senior field manager was charged with contacting all the outstanding District Administrator Questionnaire respondents. Once the data collection efforts began winding down, the field manager assigned to this task commenced the phone follow-up efforts with the district offices. To accommodate the district officials' busy schedules, the field manager completed a number of the questionnaires over the phone with the respondents. Other officials completed the questionnaires and returned them in the provided BREs. The field manager's efforts resulted in the completion of nearly 100% of the district official questionnaires.

Unlike many studies where field interviewers attempt to complete a face-to-face interview with a respondent, the main field interviewer task of this phase of the NLECSR, as mentioned before, was to gather and/or prompt for completed questionnaires for the study. Prior to these in-person visits however, NORC production center staff mailed prompting letters directly to all teachers that had already (it was hoped) received questionnaires in the originally mailed batches to the school coordinators.

Prompting Remail

In late May, toward the end of data collection efforts in the field, AIR and NORC decided to send individual questionnaires, via FedEx packages, to 2,600 outstanding teachers and principals in all but three districts, which had already closed for the school year. This effort, executed by the NLECSR central office staff in conjunction with NORC production center staff, served as a final effort to bring response rates to satisfactory levels prior to the end-of-year closure of the remainder of the school districts in the study. The success of this effort appeared to be in that the packages were sent via FedEx directly to teachers at the schools with no intermediary serving as a possible impediment or obstacle to the delivery of the packages to the teachers. The teachers were able to complete the questionnaires and mail them back individually using materials included in the FedEx package.

Incentive Distribution

AIR coordinated the accounting and distribution of incentive checks to teachers and school coordinators. In this study, teachers who submitted their completed questionnaire received a $20 incentive check. Principals and district officials who returned their completed questionnaire did not receive an incentive. Also at each school, the school nominated or assigned a school coordinator (typically the principal, but sometimes another administrator, school official, or teacher at the school) to help coordinate the data collection efforts at that school. He/she was also eligible for the $20 incentive, even if he/she served concurrently as both principal and NLECSR school coordinator. Incentives were mailed to teachers on a biweekly basis at their school addresses in individual envelopes. Only on an ad hoc and individual basis were checks mailed to nonschool addresses. As an additional "thank you," NORC also ordered pens with the NLECSR name and logo for distribution to school teachers, administrators, and any other "gatekeepers" that project staff may have encountered during the course of the study.

Data Entry

NORC central office staff and technology staff collaborated to create the computer-assisted data entry (CADE) system to capture data from the questionnaires collected during data collection. The CADE instrument included skip patterns found in the questionnaire; thus the production center staff followed the logic of the hardcopy questionnaire on the screen as they entered the data. Data entry occurred once questionnaires were received and receipted, and continued throughout data collection.

Case Review

In order to ensure a clean sample, NORC staff reviewed questionnaires and field staff reported information gained from schools concerning OOS cases, whether incomplete or complete. Although the

roster protocol was developed to create a sample of only in-scope cases, OOS cases gained entry into the sample due to incomplete roster information and staff changes and turnover. NORC reviewed various issues with AIR to develop a policy for handling cases and maintained a spreadsheet with all issues and delivered this to AIR for use in analysis. In addition to OOS cases, NORC also reviewed and addressed issues of teachers receiving a questionnaire for a subject that they did not teach. Where possible, these respondents were asked to complete the "correct" version of the questionnaire. These instances were generally the result of incomplete or inaccurate roster information or a change in assignment.

Data Review and Delivery

Throughout data collection, NORC conducted quality control measures to ensure the highest quality data. NORC staff reviewed frequencies from the beginning of data entry. In addition, separate data entry staff verified 20% of all cases entered and reconciliation of cases occurred, making sure that all cases expected were data entered. Prior to any deliveries to AIR, NORC developed and implemented data cleaning specifications. In June 2002, NORC delivered an interim dataset, codebook, and memo to AIR containing 300 cases. The final delivery, including the final dataset and supplementary files, occurred in fall of 2002. Table 2.1 reports response rates for Round 1.

Round II Data Collection

Round II of data collection for the NLECSR required modifications to the previous round's data collection methods. The chief differences between the two rounds creating the need for modifications were respondent sample scope and size. As the NLECSR data collection plan calls for teacher data collection in Rounds I and III, Round II only retains principals and district officials in the sample. Based on the sample scope for Round II, NORC and AIR decided to switch from paper-and-pencil interviewing (PAPI) to computer-assisted telephone interviewing (CATI) given that principal and district officials maintain access to telephones during the school day. This induced a change from using field managers and field interviewers in a management and prompting capacity to utilizing telephone interviewers (TIs) to complete phone interviews from the telephone shop at NORC's Chicago production center facility. These changes required alteration to Round I's instrument, case management, training schedule, reporting, and overall data collection management.

Instrument Development

NORC began preparations for the principal and district official data collection instruments in late 2002 and early 2003. While incorporating edits to the previous round's instruments provided by AIR, NORC translated the instruments to a CATI mode and developed the accompanying TNMS (telephone number management system). By utilizing the computer-assisted data entry (CADE) instruments already in place, NORC preserved previously created instrument skips and formatting. Finally, because a set of questions in the Round II principal instrument functioned with the use of specific Round I data, NORC IT staff loaded the needed data into the system. All systems were thoroughly tested prior to release.

Mailouts

One week prior to the interviewer training, an advance mailing to 714 respondents occurred from the production center by FedEx. NORC and AIR determined that the principal sample include all 649 principals from the cooperating schools, regardless of individual principals' participation in the prior round. In addition, NORC also sent the advance mailing to all 65 district officials selected during the prior round. Both packages included an advance letter reintroducing the NLECSR and asked respondents for their participation in a phone interview. Follow-up packages were faxed on an individual basis to address specific needs of principals and district officials, such as copies of the agreement form signed the year prior and other additional information requested.

Table 2.1. Round I response rates

District	Total Schools Released	Total Questionnaires Mailed	Total Questionnaires Complete	% Overall Complete	Total English Complete	% English Complete	Total Math Complete	% Math Complete	Total Principals Complete	% Principals Complete	Total District Officials Released	Total District Officials Complete	% District Officials Complete
E–1	14	185	101	75.4	41	71.9	50	79.4	10	71.4	3	3	100.0
E–2	58	700	521	82.0	250	85.0	221	78.1	50	86.2	3	3	100.0
E–3	35	419	263	69.8	117	68.4	118	69.0	28	80.0	3	3	100.0
E–4	23	251	203	83.2	93	87.7	91	79.1	19	82.6	3	2	66.7
E–5	55	684	432	70.8	180	70.3	208	69.6	44	80.0	3	3	100.0
E–6	40	532	429	90.3	199	88.8	191	90.5	39	97.5	3	3	100.0
N–1	82	980	794	87.7	365	87.5	362	89.2	67	81.7	4	4	100.0
N–2	18	199	146	78.1	72	79.1	62	79.5	12	66.7	3	3	100.0
N–3	40	334	269	81.8	123	78.8	109	82.0	37	92.5	4	4	100.0
N–4	17	208	162	84.4	75	82.4	73	86.9	14	82.4	3	3	100.0
N–5	34	245	189	84.0	84	87.5	77	81.1	28	82.4	3	3	100.0
S–1	1	9	9	100.0	5	100.0	3	100.0	1	100.0	3	3	100.0
S–2	48	676	510	83.3	251	84.2	217	81.6	42	87.5	3	3	100.0
S–3	66	696	498	80.5	232	80.0	209	79.5	57	86.4	3	3	100.0
S–4	22	261	196	85.6	99	83.2	77	87.5	20	90.9	3	3	100.0
S–5	27	354	212	75.7	106	80.9	88	72.1	18	66.7	3	3	100.0
W–1	5	56	49	89.1	20	90.9	24	85.7	5	100.0	3	3	100.0
W–2	16	156	126	89.4	60	89.6	51	87.9	15	93.8	3	3	100.0
W–3	22	504	355	72.7	185	71.7	149	71.6	21	95.5	3	3	100.0
W–4	13	122	106	93.8	53	93.0	42	97.7	11	84.6	3	3	100.0
W–5	13	74	62	84.9	30	88.2	22	84.6	10	76.9	3	3	100.0
Total	**649**	**7645**	**5632**	**81.2**	**2640**	**81.5**	**2444**	**80.3**	**548**	**84.4**	**65**	**64**	**98.5**

Telephone Interviewing Staff

Due to the mode change, PAPI to CATI, NORC chose to utilize its Chicago telephone interviewing center and staff for the NLECSR, rather than the field staff used in Round I. NLECSR's production center coordinator recruited and trained veteran NORC staff with experience in studies dealing with institutions (e.g. hospitals) as well as well-qualified newly hired staff in early March 2003. The in-person training of eight TIs included information on the study as well as directed practice with the CATI instrument. Interviewers who passed the thorough certification process for the NLECSR began to call sample members in the days following the training. They followed up on the advance mailing, answered questions, and attempted to complete interviews with the principals and district officials.

Prompting Mailing

In early May 2003, the Telephone Center supervisors created a list of pending principal and district official cases; consequently the production center mailed about 260 refusal conversion and prompting letters by FedEx.

School Closings and Position Elimination

During data collection, NORC Telephone Center staff discovered three OOS principal cases and one OOS district official case. The principal OOS cases resulted from schools closing prior to the 2002–03 school year. The OOS district official case occurred in a small district where the position was eliminated. The viable district official able to replace the respondent in the eliminated position was already a respondent under another ID in the NLECSR. Therefore, NORC was unable to replace the respondent in the study.

Data Review and Delivery

NORC staff thoroughly reviewed data gathered by the TIs, and 20% of cases were verified by supervisory staff. NORC delivered Round II data on June 20, 2003, after careful review and preparation. A list of dispositions for all cases was included in the delivery files. NORC delivered 51 district cases and 571 principal cases. Table 2.2 reports response rates for Round II.

Table 2.2. Round II response rates

District	Total Respondents Released	Total Interviews Complete	% Overall Complete	Total District Officials Complete	% District Officials Complete	Total Principals Complete	% Principals Complete
E–1	17	14	82.40	3	100.00	11	78.60
E–2	61	54	88.50	1	33.30	53	91.40
E–3	38	31	81.60	2	66.70	29	82.90
E–4	26	23	88.50	3	100.00	20	87.00
E–5	58	51	87.90	3	100.00	48	87.30
E–6	43	36	83.70	3	100.00	33	82.50
N–1*	86	75	89.30	3	75.00	72	90.00
N–2	21	18	85.70	2	66.70	16	88.90
N–3	44	40	90.90	4	100.00	36	90.00
N–4**	20	16	84.20	2	100.00	14	82.40
N–5	37	34	91.90	3	100.00	31	91.20
S–1	4	4	100.00	3	100.00	1	100.00
S–2	51	44	86.30	2	66.70	42	87.50
S–3*	69	58	85.30	2	66.70	56	86.20
S–4	25	24	96.00	3	100.00	21	95.50
S–5	30	24	80.00	2	66.70	22	81.50

District	Total Respondents Released	Total Interviews Complete	% Overall Complete	Total District Officials Complete	% District Officials Complete	Total Principals Complete	% Principals Complete
W–1	8	7	87.50	2	66.70	5	100.00
W–2	19	17	89.50	2	66.70	15	93.80
W–3	25	24	96.00	2	66.70	22	100.00
W–4	16	14	87.50	2	66.70	12	92.30
W–5	16	14	87.50	2	66.70	12	92.30
Total	**714**	**622**	**87.60**	**51**	**79.70**	**571**	**88.40**

* Three schools closed for the 2002–03 school year and thus the principal cases for those have been made OOS.

** One district official position was eliminated; we had already interviewed the suggested respondent at this district.

Round III Data Collection

As in the previous round, Round III of data collection for NLECSR required modifications to the previous rounds' data collection methods. Like Round II, principals and district officials were asked to complete telephone interviews, thus CATIs and TIs at NORC's production center were utilized once again. Unlike Round II however, a teacher sample was again asked to participate in the study. The necessary rostering process implemented in Round III, as will be discussed in further detail below, went through some modifications based on lessons learned in Round I. Because of the difficulty of contacting teachers by phone, the study maintained the teacher survey mode from the original round, paper-and-pencil interviews, and utilized NORC field managers for prompting at schools. Since teachers were participating in this round, NORC and AIR also resurrected the Round I incentive process for teachers and coordinators. There were slight modifications to the survey instruments as specified by the client. To accommodate the use of both the production center and field staff, alteration to previous rounds' case management, training schedule, reporting, and overall data collection management was necessary.

Instrument Development

NORC began preparations for the principal, district official, and teacher data collection instruments in fall 2003. The modes remained the same as the preceding rounds so there was no instrument SurveyCraft translation required in Round III for the three instruments. As in the previous round, AIR provided edits to the previous rounds' instruments and NORC implemented the changes and additions to the preexisting electronic instruments. NORC also reinstituted the TNMS system used in Round II. AIR utilized the copy of the Round I teacher PAPI questionnaire to make changes for the paper questionnaire which would be mailed to the teachers in the NLECSR sample. NORC staff in the central office and production center tested all instruments and approved them for data collection. Finally, because a set of questions in the Round III principal instrument functioned with the use of specific Round II data, NORC IT staff loaded the necessary data into the system.

Teacher Rosters and Sampling

In late 2003 through early 2004, NORC collected teacher rosters over the phone in order to create the teacher sample for Round III. Due to the varying quality and format of the hard copy rosters received during the first round, a different approach of collecting teacher rosters was used in this round. By collecting the teacher roster information over the phone, NORC field staff could immediately clarify and verify any information given, rather than calling back after receiving a hard copy where teachers' eligibility for the study, grades, and subjects might be missing or unclear. Following their November 2003 training, field managers verified, corrected, and updated the original roster obtained in Round I.

The final step of the rostering process was the assignment of an eight-digit SUID to new teachers. As in the first round, NORC randomly assigned questionnaire versions where teachers were deemed a "generalist" (teaching all subjects including math and English) in the roster file. Starting from the last in-scope teacher from the original round, new teachers were assigned the subsequent version, alternating versions for each teacher that followed.

Mailouts

NORC sent an advance mailing for Round III to principals and district officials in late January 2004. This mailing was sent approximately a week prior to the interviewer training and included a letter reminding respondents of the study, asking for their participation in a phone interview. In all, 696 respondents received either a principal (631) or district official (65) letter. In mid-February, the production center mailed bundles of teacher questionnaires to each of the 631 schools participating in Round III. Each school package was made up of individual teacher packets. The 5,635 teachers received a cover letter, either a mathematics or English/language arts questionnaire with a label (including the teacher's SUID), and a prepaid business reply envelope printed with the production center facility's address all within an envelope marked with the teacher's information (including name and SUID). The individual teacher packets were packaged together with a cover letter instructing the school contact concerning the questionnaire distribution. The materials in this package mentioned the $20 incentive for teachers who completed the questionnaire and the school contacts who served as the study coordinators.

Field Contacting

Over the course of data collection, several training sessions via phone were held to accommodate field staff brought onto the project mid-phase. The original training was held in February 2004. Field managers called to prompt for teacher questionnaires and answer any questions. Also, some schools received in-person prompting visits by field interviewers, managed by the field managers. Field interviewers provided extra teacher questionnaires, responded to questions, and picked up completed teacher questionnaires where possible. Calls to schools began following the teacher questionnaire mailing.

Telephone Interviewing Staff

In Round III, NORC again collected principal and district official data via telephone interviews. To conduct the interviews, NORC utilized its Chicago telephone interviewing center facilities and staff. In early February 2004, a 1-day in-person training session took place at the production center's training facility, involving nine TIs. As in the prior round, the interviewers were trained to be able to answer questions as well as complete the CATI with principals and district officials. TIs who were certified following their training began to call sample members to follow up on the advance mailing, answer questions, and attempt to complete the survey over the phone.

Prompting Mailings

In mid-April, NORC conducted a mass prompting mailing via FedEx where new questionnaires were sent individually to teachers from whom NORC had not yet received a questionnaire and who had not been deemed OOS. This was in addition to regular mailings to teachers who requested remails when prompted for their survey.

Also in mid-April, NORC sent letters to principals and district officials reminding them of the study and asking them to call the study's toll-free number to complete an interview. Each type of respondent was assigned a prompting letter or a refusal letter based on disposition codes given to each case by the TIs. The mailing as a whole included approximately a quarter of the original principal and district official samples. In mid-June, another letter was sent to principals and district officials which stated that

interviewers had been trying to reach them and, again, to call the toll-free number to set up an interview. Over one fifth of the original principal and district official samples received this letter.

Incentive Distribution

Round III incentive distribution procedures sought to automate many processes that had been done manually during Round I of NLECSR. Just as in Round I, AIR coordinated the accounting and distribution of incentive checks to teachers and school coordinators. AIR again mailed all incentive checks to the respondent's school address on file, unless the respondent specifically notified NORC or AIR with a valid reason for why they could not retrieve their check from the school. In addition, NORC ordered giant blue plastic paperclips with the NLECSR logo and contacting information to include as a small incentive with mailing materials.

Case Review

As in Round I, NORC staff addressed cases where teachers reported being OOS or received the "wrong" type of questionnaire due to inaccurate roster information or other similar reasons. Again, NORC recorded all information concerning OOS cases and presented it to AIR for analysis purposes. In this final round, one field manager was retained following the end of data collection to verify alleged OOS cases with the school where the information was unclear, as well as where a teacher's status was unknown. Where respondents received and *completed* the wrong questionnaire, NORC sought to retrieve the subject-specific information. In early May, NORC worked with AIR to produce incentive checks for cases like these to include in a "retrieval" package which included photocopies of the relevant subject-specific pages to be completed, a BRE and their incentive check. Since the respondents had already completed a substantial amount of the questionnaire, the inclusion of the incentive check in the retrieval mailing was believed to encourage respondents to respond to the request.

During data collection it was discovered by the TIs that some former district official respondents were no longer at the district and the position that they had held was vacant or rolled into another official's responsibilities. At this point, where a position's responsibilities were held by another (current) respondent or no one, the cases were determined in consultation with AIR to be OOS. In addition, it was determined by AIR that some current district official respondents were not suitable respondents for their purposes (i.e., their responsibilities did not include any areas related to the questionnaires). Thus, they were replaced by cases bearing the positions named by AIR. Changes like these made to the sample were detailed in the final delivery supplemental files. Due to various decreases and increases in the district official sample, the number of total respondents decreased from the original 65 to 60.

Data Review and Delivery

NORC delivered the Round III data in two parts: CATI data (from principal and district official cases) on August 10, 2004, and the PAPI data (from teacher cases) on August 19, 2004. In all, NORC delivered 45 district cases, 482 principal cases, and 3,877 teacher cases (125 of which were OOS). There was a second delivery of teacher data on September 30, 2004. Per AIR, this delivery included 19 new cases that came in after the first data delivery was completed. Tables 2.3 and 2.4 report response rates for Round III.

A number of district official positions were unmanned, eliminated, and inherited by other persons. In addition, AIR made some decisions on respondents in R3 which resulted in new cases. These changes are reflected here; 11 districts being affected.

Table 2.3. Round III response rates: Principals and district officials

District	Total R Released	Total in Scope R Released	% Overall Complete	Total District Off. Complete	% District Off. Complete	Total Principals Complete	% Principals Complete
E–1*	15	15	86.70	3	100.00	10	83.30
E–2*#$	59	59	79.70	2	66.70	45	80.40
E–3	38	38	71.10	2	66.70	25	71.40
E–4	26	26	73.10	3	100.00	16	69.60
E–5*	56	55	74.50	1	50.00	40	75.50
E–6*#	42	42	64.30	1	33.30	26	66.70
N–1*	83	83	85.50	2	50.00	69	87.30
N–2#	21	21	81.00	1	33.30	16	88.90
N–3	44	44	70.50	2	66.70	29	72.50
N–4	20	18	77.80	1	50.00	13	76.50
N–5*#	30	29	72.40	2	100.00	19	70.40
S–1	4	4	100.00	3	100.00	1	100.00
S–2#	51	50	68.00	2	100.00	32	66.70
S–3*#	68	68	76.50	2	66.70	50	76.90
S–4#	25	25	72.00	3	100.00	15	68.20
S–5#	30	30	66.70	3	100.00	17	63.00
W–1	8	8	87.50	2	66.70	5	100.00
W–2	19	19	89.50	3	100.00	14	87.50
W–3	25	25	80.00	2	66.70	18	81.80
W–4$	16	16	87.50	3	100.00	11	84.60
W–5#	16	16	81.30	2	66.70	11	84.60
Total	**696**	**691**	**76.30**	**45**	**75.00**	**482**	**76.40**

Eleven total partial principal cases are included here.

$ Two total partial district official cases are included here.

* Eighteen schools closed for the 2003–04 school year and thus the principal cases for those have been made OOS, reducing the sample to 631.

Table 2.4. Round III response rates: Teachers

District	Total Quexes Mailed	OOS Total	Total Quexes Complete	% Complete Overall	Total ENG mailed	% ENG Complete	Total MATH mailed	% MATH Complete
E–1	90	4	64	74.40%	41	72.50%	49	76.10%
E–2	433	43	236	60.50%	238	60.80%	195	60.10%
E–3	401	48	252	71.40%	194	70.00%	207	72.70%
E–4	277	36	178	73.90%	136	74.60%	141	73.10%
E–5	497	38	335	73.00%	226	72.20%	271	73.60%
E–6	380	41	237	69.90%	186	71.50%	194	68.40%
N–1	802	68	510	69.50%	396	71.40%	406	67.60%
N–2	162	10	119	78.30%	86	77.20%	76	79.50%
N–3	256	17	145	60.70%	136	61.10%	120	60.20%
N–4	130	17	86	76.10%	65	73.70%	65	78.60%
N–5	137	11	87	69.00%	66	67.70%	71	70.30%
S–1	10	0	10	100.00%	5	100.00%	5	100.00%
S–2	550	34	397	76.90%	279	78.80%	271	75.00%
S–3	542	36	371	73.30%	279	73.90%	263	72.70%
S–4	162	8	111	72.10%	88	71.10%	74	73.20%
S–5	202	14	139	73.90%	103	74.50%	99	73.40%

District	Total Quexes Mailed	OOS Total	Total Quexes Complete	% Complete Overall	Total ENG mailed	% ENG Complete	Total MATH mailed	% MATH Complete
W–1	57	18	36	92.30%	27	94.70%	30	90.00%
W–2	82	3	51	64.60%	40	68.40%	42	61.00%
W–3	449	18	297	68.90%	235	67.60%	214	70.40%
W–4	68	1	57	85.10%	37	78.40%	31	93.30%
W–5	68	1	53	79.10%	36	77.10%	32	81.30%
Total	**5755**	**466**	**3771**	**71.30%**	**2899**	**71.50%**	**2856**	**71.10%**

Note: OOS teachers have been taken out of the denominator.

Case Study

As a complement to survey work, NLECSR also included case study work to provide an in-depth description of the processes associated with CSR implementation. In particular, the qualitative NLECSR component worked to answer the following question: What supporting conditions and strategies are necessary to effectively implement and sustain reform in schools and at district levels?

The NLECSR qualitative data collection activities occurred at the classroom, school, and district levels. These activities involved visits to 24 CSR model schools in five districts. Schools and districts were selected from the NLECSR subsample primarily based on school and district setting characteristics, such as achievement, duration of CSR model implementation, and student demographics. All schools and districts were visited during the 2002–03 school year. Selected CSR model schools in three districts were visited a second time during the 2003–04 school year for more in-depth data on CSR processes.

On-site visits to schools and districts, semi-structured interviews and focus groups with school administrators and teachers constituted core data collection activities. Interviews were conducted with 57 administrators (principals, assistant principals, and facilitators), 192 teachers, and 30 teacher focus groups. Individual interviews of administrators lasted approximately 60 minutes. Individual interviews of teachers and focus group interviews of teachers ranged from 15 to 30 minutes. All interviews were audiotaped and transcribed. To supplement these interviews, other data collection activities included school and classroom observations, collection of key documents such as school improvement plans, and interviews with community and district leaders.

Analysis of the data collected involved two main activities. First, interview and focus group transcripts were coded by using a construct key mainly covering CSR model components (i.e., school culture, organization and governance, curriculum and instruction, assessment, and professional development). Throughout the coding process, researchers discussed the codes and defined them based on the data. Once all transcripts were coded, coded text was organized by using NUD*IST v.6, a qualitative software program. Using these coded data, case reports were written for each school and developed within- and cross-case data displays (Miles & Huberman, 1994).

Second, we developed a rubric to facilitate the systematic analysis of school-level support for CSR and related constructs. The NLECSR Analytic Rubric contained four primary sections related to participant understanding of CSR, perceptions of the CSR model, school-level processes related to the model, and professional resources. To complete a rubric for each school, a researcher read all principal, facilitator, and teacher interview and focus group transcripts, identified text that informed the constructs related to understanding of CSR, and rated each respondent's comments for both constructs.

Extant Achievement Data

Extant school-level achievement data were collected for all schools in the study from the National School-Level State Assessment Database. Ideally, we would have collected extant student-level data for all schools as well. Not all states, however, administer state assessments in such a way, nor do they store student level data in such a way as to make this a worthwhile endeavor. We aimed instead to identify which of our 21 districts could provide 5 years of student-level achievement data that could be longitudinally linked, for achievement tests that were vertically equated. We identified Dodgeland, Riverton, Elm County, Hickoryville, and Rainfield[15] as having appropriate data available, as well as a substantial number of NLECSR schools and comparison schools.

Districts were asked to provide individual student-level data for students in all K–8 grades where test scores were available for 5 school years, from 1999–2000 through 2003–04. The five districts were able to provide data that allowed us to link a student's records from one year to records from other years, which made it possible to do an analysis of achievement growth. Districts also supplied demographic data on their students and schools, where possible. Districts were asked to provide the data listed in Figure 2.1. Table 2.5 illustrates the cohort analyses these data make possible.

Table 2.5. Cohort analyses possible with these data

School Year	Background 1999–2000	Background 2000–2001	Year 1 2001–02	Year 2 2002–03	Year 3 2003–04
					K
				K	1
Cohort K			K	1	2
Cohort 1		K	1	2	3*
Cohort 2	K	1	2	3	4
Cohort 3	1	2	3*	4	5*
Cohort 4	2	3	4	5	6*
Cohort 5	3	4	5*	6	7
Cohort 6	4	5	6*	7	8*
Cohort 7	5	6	7	8	
Cohort 8	6	7	8*		

* Indicates teacher survey data available in that year.

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[15] Throughout this report we use pseudonyms for schools and districts in order to protect the confidentiality of respondents.

Figure 2.1. Student-level data requested

1999–2000 and 2000–2001
Individual student-level data for students in all K–8 grades where test scores are available:
Student ID (linkable over time if possible)
School ID (CCD ID if possible)
School year
School name
Grade level
Math test score (scaled score preferred)
Reading test score (scaled score preferred)

2001–02, 2002–03, and 2003–04
Individual student-level data for students in all K–8 grades where test scores are available:
Student ID (linkable over time if possible)
School ID (CCD ID if possible)
School year
School name
Grade level
Date of birth
Gender
Race (Black, Hispanic, Asian, White, Other)
English proficiency
Special Education (IEP) status
Free/reduced-price lunch status (or some other measure of socio-economic status)
Gifted program (yes or no)
Summer school attendance (yes or no)
Days absent
Math test score (scaled score preferred)
Reading test score (scaled score preferred)

School-level data for all students in K–8:
School ID (CCD ID if possible)
School name
Enrollment
Number of Students leaving the school during the year
Number of Students entering the school during the year
Number of Special education
Number of Free/reduced price lunch status
Number of LEP/ELL

Chapter 3: The State and District Context for Comprehensive School Reform

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Introduction

Although comprehensive school reform operates as a school-level process, it does not occur within a vacuum. Rather, CSR schools are embedded within districts, which in turn are embedded within states, both of which enact policies and engage in practices that may support or hinder CSR efforts. For CSR implementation to be strong and sustained, scholars have argued that it must take place within the context of a "supportive operating environment," including the district and state (Bodily, 1998).

While most of this report is framed around the notion of a CSR "life cycle," we first situate the school-level activities undertaken as part of CSR within their broader contexts. The primary objective of this chapter is to review the contextual background of district and state activities, both within the CSR research literature, as well as the specific states and districts that make up the NLECSR sample. In doing so, we will address Research Question 3: What supporting conditions and strategies are necessary to effectively implement and sustain CSR models in schools and school districts?

The organization of this chapter is as follows. First, we review the literature on the state and district roles in the implementation of CSR and offer a framework for understanding the key components of those roles. We then present our analyses of NLECSR's state-level data collected from interviews with state CSR coordinators and a review of relevant policy documents. Next, we examine the district context for CSR, drawing on data from district interview respondents as well as NLECSR's 2002–03 district survey. Finally, we explore some of the relationships between states' and districts' CSR activities. Throughout, we frame our discussion around three themes: (1) the alignment of CSR with other improvement strategies, (2) state and district activities to support CSR, and (3) the ways in which states and districts are refining their approach to CSR.

Conceptual Framework and Literature Review

States

Although states have been increasingly active with regard to school improvement policy since the movement toward standards-based reform (Lusi, 1997), most state-level CSR policies typically did not originate until the Comprehensive School Reform Demonstration Program was created in 1998 as part of Public Law 105-78. This program (frequently referred to by its sponsors' names, Obey-Porter) charged state education agencies (SEAs) with administering federal CSR grants to schools and districts. Federal policy and guidance for the new program allowed states considerable latitude in disbursing the funds. Although states needed to comply with certain minimum requirements, they could specify award priorities, application procedures, and funding allotments.

The establishment of the Comprehensive School Reform Demonstration Program in 1998 extended the federal government's support for schoolwide capacity-building reforms by offering grants of no less than

$50,000 for schools implementing CSR models. In 2001, Congress incorporated the federal CSR program into the accountability-focused NCLB. Furthermore, NCLB's new policies for the CSR program explicitly tied it to states' accountability mechanisms; for instance, these new CSR policies included requirements that SEAs (1) give priority to schools identified for improvement or corrective action under their accountability systems (Title I, Part F, section 1604) and (2) annually evaluate the extent to which schools' implementation of CSR has led to improved student performance (Title I, Part F, section 1607). Thus, CSR became framed as a capacity-building tool within an overall model of accountability and school improvement.

As a result, states developed CSR strategies that were suited to their existing SEA and state policy contexts, and the resulting state activity became the subject of some limited research on the role of the state in CSR implementation (Hamann & Lane, 2004; Lane & Gracia, 2005; Datnow, 2005). From this research, three key themes emerge:

1. The evolution of the state role from a compliance enforcer to that of a capacity-builder.
2. The alignment of CSR policies with the existing policy context
3. The refinement of state policies to better support CSR

While current research into states' roles in supporting CSR is in rather short supply, this line of inquiry taps into more generalized theories that SEAs are moving away from traditionally limited roles as compliance enforcers to become more active facilitators of school and district capacity building through such activities as building technical assistance and professional development infrastructures, organizing resource allocation, and establishing reform frameworks, standards, and goals (Lusi, 1997; Little & Houston, 2003; Massell, 1998).

The alignment of CSR and other state policies is another prominent theme in the current literature on state implementation of CSR. Since federal CSR policy affords states considerable flexibility in deciding how to implement the grant program, many SEAs made key policy decisions to adapt their CSR strategies and fit them into existing state accountability practices, initiatives, reform goals, and institutional contexts (Lane & Gracia, 2005; Hamann & Lane, 2004). In some cases, states have made direct choices to incorporate CSR into other state programs; Hamann and Lane (2004) describe how Maine merged the CSRD funding opportunity into a state-initiated high school reform program by adapting federal CSRD policy to target only high schools and by connecting the application for CSRD funding to the application for the state program funding. Moreover, states have employed components of their statewide systems of support for low-performing schools to facilitate and assist in schools' CSR efforts (Lane & Gracia, 2005).

Additionally, states' decisions to incorporate CSR into broader school improvement strategies resonates with theories of systemic reform which advocate integrating state education policies to align them around a common set of educational objectives (O'Day & Smith, 1993; Fuhrman, 1993; Elmore, 1993; Lusi, 1997). Such integration is intended to promote coherence across all levels of education systems and to replace "the practice of fashioning a separate program for each educational problem" whereby "individual projects, no matter how uniquely worthy, seldom reinforce one another and frequently send different, even conflicting messages to schools" (Fuhrman, 1993, p. 7).

Districts

In contrast to the state, the central role of the district has been the subject of more intensive scrutiny on the part of researchers. For example, in their study of Success for All (SFA) implementation, Cooper,

Slavin, and Madden (1998) argue that, while district participation is not necessary for initiating comprehensive school reform, it is "prerequisite to sustaining fundamental change in schools" (p. 399).

Several important CSR studies have developed taxonomies of district strategies and conditions that will most optimally support CSR. In one of the more comprehensive studies of the district role in CSR, Bodilly's study of the implementation of New American Schools (NAS) designs (1998) determined that certain district contexts and activities were associated with higher levels of implementation of CSR models. Districts that offered higher levels of support had higher levels of implementation while less supportive districts had lower levels of implementation. Using interviews in which school staff were asked which actions, policies, and conditions at the district level supported their reform work, Bodilly established the following framework for effective district-level support:

1. *Observed leadership support and central placement of the initiative*—Central placement of the initiative was measured in terms of the consistency of attention to the effort, the actions taken to ensure that school staff understood its importance, the lack of competing initiatives or setting a clear priority for this initiative, and the perceived longevity of the superintendent or main advocate

2. *Lack of crisis situations*—Bodilly reports that school staff in districts facing crises tended to adopt a "wait and see attitude" and to assume "this too will pass" more often than staff from other districts.

3. *Culture of cooperation and trust*—This component involves the history of a district's relationship between management and labor. Examples of distrust reported by school staff included their perceived lack of commitment from district superiors, changes in policy, and perceived lack of follow-through.

4. *School level authority and/or autonomy*—Schools without substantial decision-making authority often encountered problems where rigid district policies interfered with the implementation of their CSR model's various components. Districts could help minimize such conflicts by affording schools significant control over curriculum, instruction, schedules and materials; personnel hiring, firing, transfer, and positions, professional development; and budget.

5. *Availability of resources for transformation*—A lack of resources determined necessary by the design team was seen as a barrier to implementation, and some school staff interpreted the underfunding they observed as a message that the CSR effort was less important than other concerns.

6. *Design-compatible accountability and assessment systems*—This component involves the compatibility between a CSR design's requirements for student learning and the state and/or district requirements for measured student learning.

Berends (2001) used this framework for district support in his quantitative analysis of NAS's Scale-up period. As hypothesized, schools within districts that ranked a standard deviation higher on this support index had implementation levels that were about one-tenth of a standard deviation higher than those in less supportive districts. This study also found that, on average, schools reporting more resources for implementation (including materials; professional development; time for planning, collaboration, and development; consultants to provide ongoing support; technology; and funding) had higher levels of implementation.

A policy brief by the Consortium for Policy Research in Education (1998) argues that districts play several crucial roles in initiating and sustaining CSR programs. While the RAND work (Bodilly &

Berends, 1999) described supportive district conditions, the CPRE literature described specific district activities that would support CSR. These included (1) assisting schools in selecting a model design, (2) structuring the CSR approach into the school's and district's continuing operations, (3) designing a new district operating environment, (4) finding a district-appropriate method of supporting CSR, (5) monitoring and controlling the quality and performance of design teams, and (6) creating an outreach process that engages and informs parents and the school's community.

Slavin (1998; cited in MacIver & Balfanz, 2000) suggested districts perform the following functions in facilitating comprehensive school reform: (1) identify the set of models that will be offered to schools; (2) determine what the district will do to support implementation; (3) determine how the models fit with the district's overall reform strategy; (4) identify schools that will have opportunity to implement models; (5) assist schools in learning about each model so that schools can make an informed choice; (6) ensure that each school works closely with the model developers; and (7) design a process for evaluating a model's success.

Datnow and Stringfield (2000) indicate that districts need to establish a finite set of widely shared goals tied to long-term key improvement measures; create a coordinated and broad-based plan for disseminating information about reform; facilitate a thoughtful, critical evaluation of what needs to change in a school and why; align policy systems to support reform; and be willing to change to adapt to the needs of the reform.

Although the district literature is more diverse than are studies of the state role, we can discern at least two broad themes. First, districts may vary with regard to the extent to which CSR strategies are *aligned with existing district strategies* to support school improvement, including curricular strategies, accountability policies, and professional development. Next, districts vary with regard to the *level of support* they provide to CSR schools, including support during the model selection process, support during implementation (including contact with model developers), appropriate leadership, adequate resources, and providing school-level autonomy.

To best integrate NLECSR data on the state and district roles in CSR, we sought to distill our discussion into three primary themes, which reflect both existing research and our own findings. The first of these is policy **alignment**: both the state and district literature clearly underscore the importance of ensuring an appropriate alignment or coherence between existing policies (including, for example, curriculum and professional development) and CSR initiatives. The second theme is that of **support strategies**: at the state and district levels alike, the literature points to specific policies and strategies to support the selection and implementation of CSR models. Finally—although this is less prominent in the current literature—researchers suggest the importance of a feedback loop (Orland & Goettel, 1982; Datnow & Stringfield, 2000; Berends et al., 2002); that is, a mechanism through which education administrators improve upon existing policies, perhaps through a formal evaluation process or by soliciting and responding to feedback from stakeholders. In this chapter, we will refer to this theme as that of **policy refinement** (Figure 3.1).

Beyond the overarching question—what supporting conditions and strategies are necessary to effectively implement and sustain CSR models in schools and school districts?—this chapter also addresses several specific subquestions associated with the state and district roles in supporting CSR. First, with regard to the state level, we consider the extent to which CSR is integrated with other state strategies for school improvement, the types of support that are provided by states, and the ways in which states are refining their approach to CSR. Then, we turn our attention to the district and ask how does CSR connect to the district's overall improvement strategies? In what types of CSR support strategies do districts most

frequently engage? How have districts' approaches to CSR evolved? Finally, we inquire how states' CSR strategies interact with CSR policies of the districts nested within them.

Figure 3.1. Conceptual framework
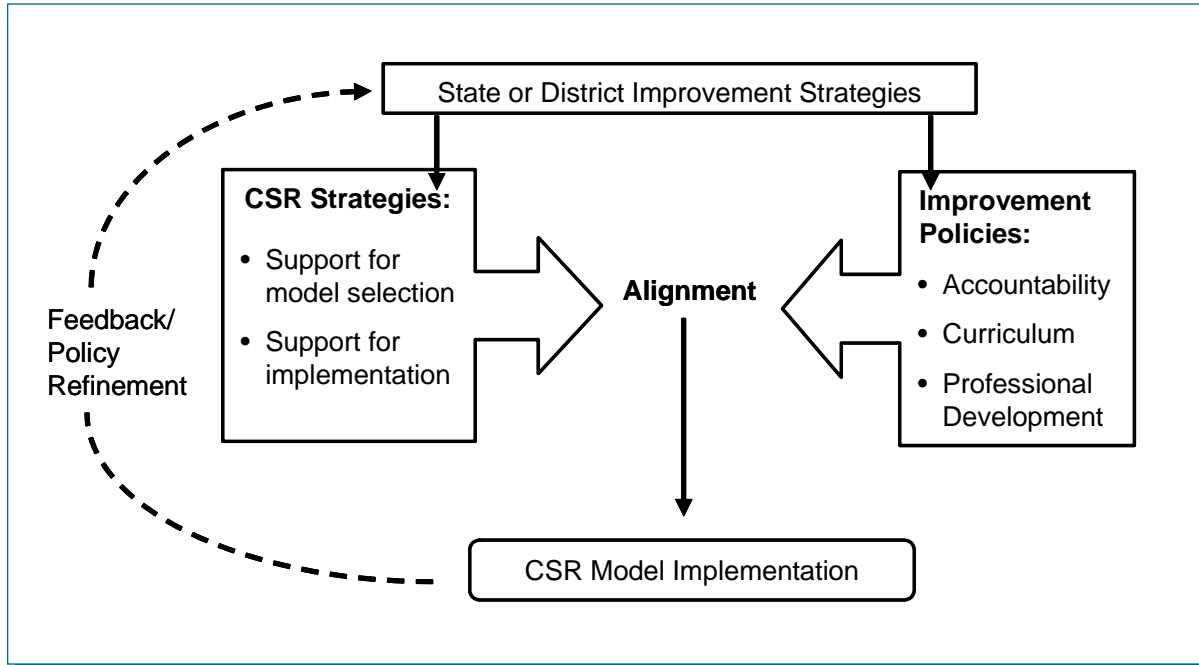
State Methods/Analytic Approach

Data

To investigate state strategies toward comprehensive school reform, we focused on two primary data collection strategies in the 16 states in which the NLECSR districts and schools were embedded. The first involved a thorough review of relevant state and federal policy documents. These included the policy and guidance for Title I, Part F of NCLB, which reauthorized the federal CSR grant program initially established in 1997. We also examined states' Consolidated State Applications under NCLB, in which states were required to detail their overall approach to the federal CSR program, targeting strategy, and evaluation methods. In addition, we consulted policy documents available from state department of education Web sites. Among these were CSR grant RFPs, evaluation rubrics for grant applications, CSR component descriptions and crosswalks, and agendas for technical assistance workshops.

Although these documents provided insight into the state role with regard to comprehensive school reform, they lacked the depth necessary to address some of our more fundamental questions. We conducted interviews with state officials with primary responsibility for the administration of the federal CSR program. We developed an open-ended interview protocol with questions that probed the following:

♦ History of state involvement in CSR

♦ Evolution of state strategy with regard to CSR

♦ Role of CSR in state system of support for low-performing schools

♦ Rationale for funding strategy

♦ State technical assistance

♦ State role in model adoption

♦ Challenges associated with CSR

Although we had anticipated that the interview would last approximately 30 minutes, respondents often spoke longer, and several interviews lasted 45 minutes. One staff member conducted the interview, while a second listened and took notes on computer. These notes were later reviewed in conjunction with the audio recording and were supplemented as necessary. From each interview we produced a transcript that was close to verbatim.

Analytic Models and Methods

Staff members who had developed the interview protocol were also those who had conducted the interviews, increasing familiarity with the interview content and facilitating analyses. First, we reviewed each transcript, highlighting key passages related to states' CSR policy-making decisions. Upon a second review, we began to associate codes with highlighted text and entered passages into an excel template which facilitated the comparison of common themes across states.

Through a process of identifying codes, clustering conceptually linked variables, refining categories, and creating indices, we developed an analytic mechanism for determining patterns in state CSR activities. In short, we identified three dimensions to describe states' CSR policy activities, reflected in the conceptual framework presented earlier:

♦ **The alignment of CSR** dimension consisted of state policies and activities to (1) target certain types of schools for CSR funding and (2) connect CSR to the state's system of support for low-performing schools. Connections between CSR and a state's system of support might occur through collaboration among CSR coordinators and state school support staff or through states' incorporation of CSR into policies governing their school improvement strategy.

♦ **The support for CSR** dimension included four components: (1) using the CSR planning application/planning process to ensure schools' readiness to implement a CSR plan, (2) allotting funds to schools, (3) providing technical assistance to help schools write successful grant applications, and (4) providing technical assistance to help schools implement their proposed CSR plan.

♦ **The refinement of CSR** dimension involved only one component: the degree to which states change their CSR policies to meet state and school needs.

For each of the seven components, we developed a set of categories and descriptors to capture the variation among states' approaches to them. We then assigned each approach category a numeric rating such that a score of 0 indicated an approach heavily dictated by federal policy and/or guidance, and higher scores indicated approaches that involved higher levels of activity at the state level.

State Findings/Results

Alignment of CSR With Other State Strategies

State System of Support: Connections with CSR

Under NCLB, all states are required to establish a system of support for schools identified for improvement under Title I. Frequently, these systems extend services beyond only Title I schools identified for improvement and encompass non-Title I schools, schools determined to be low-performing under the state accountability system, and schools that do not make adequately yearly progress for only 1 year. NCLB provisions articulate specific structures that states should establish to support identified schools, including school support teams, distinguished teachers, and distinguished principals. Despite relative uniformity of federal guidelines, states vary greatly in the ways in which they have conceptualized their systems of support.[16]

Because we have assured confidentiality to all participants in our study—from the state to the local level—we cannot describe state systems in a way that would reveal any states. However, because there are commonalities among the states in our study, and indeed throughout the country, we can outline general trends and "types" of states. The examples presented below are hypothetical composites of the strategies we found among the states within our sample.

Among the states in our study are several that have spent many years developing comprehensive support systems. Often, these systems include both tools and structures that together encompass an overarching improvement process. These tools are designed to assist schools in the needs assessment process, data analysis, developing a school improvement plan, aligning funding streams, and monitoring implementation. The structures may consist of school support teams, school improvement coaches, or regional agencies that provide assistance to schools on an as-needed basis. The core of such systems is a coherent vision for school improvement, generally grounded in research on school reform. States that have such systems weave new federal grant opportunities into the overall approach to school improvement—and such was the case with the federal CSR program in nearly half of the states in our study.

Let us consider an example of a state with a coherent and comprehensive system of support for identified schools. Often, states with such systems conduct a triage of schools based on core accountability measures, determining which states had missed the highest number of Adequate Yearly Progress (AYP) targets or which had failed to make AYP for several consecutive years. The state then schedules for each of these schools to be visited by a school support team. The team may spend a week at a school, helping administrators and teachers to review assessment data, identifying content areas that presented challenges or subgroups of students that could benefit from targeted interventions. The school support team is most often comprised of SEA school improvement staff, most of whom also have responsibilities for other federal programs, including Title I Part A, CSR, and perhaps Reading First or supplemental educational services. Such staff members assist the school as they identify appropriate improvement strategies and funding opportunities. Working with school staff, the SEA support team help identify which of these high-need schools had adequate capacity to benefit from a federal CSR grant, whether the CSR program would integrate well with any existing school-level initiatives, and whether the staff had the capacity to write a CSR grant. As an official in one such state explained,

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[16] For an overview of No Child Left Behind's provisions regarding statewide systems of support, see *No Child Left Behind Act of 2001* (2002). Pub. L. No.107-110, §1117, 115 Stat. 1498-1501 (2001).

> CSR falls into and underneath the school improvement division, so we are not only in the same office with all of the low-performing schools, we are also part of the process that goes out and facilitates the assistance to those schools… we make sure that school improvement plans are aligned with all of the other initiatives in the school as well as the technical assistance and guidance we provide.

In this context, CSR is perceived as an important support strategy (among others) to be targeted to appropriate schools as part of a broad state vision for school improvement.

At the other extreme are states that have devoted fewer resources to the development of a system of support. There are many reasons for which states have failed to establish such systems, including insufficient human or financial resources, strong traditions of local control, or relatively few schools identified for improvement. In this context, CSR is merely a funding stream to be administered by the state, rather than an opportunity to be leveraged as part of a broader strategy to address the needs of low-performing schools. In the sample of states we interviewed for this study, this constituted approximately one third of the states.

Targeting CSR Funds

States also vary in important ways with regard to the way in which they target schools for CSR grants, and this variation is often—but not always—associated with the coherence of the overall system of support. Federal CSR guidance articulates CSR eligibility requirements, but these are relatively broad. Formally, local education agencies (LEAs) apply to states on behalf of Title I-eligible schools, preferably those in which there is the greatest likelihood of promoting schoolwide change and improved student achievement. Among the states in our sample, approximately one third adopted these fairly general targeting strategies: eligible schools were high-poverty, low-performing schools that had missed AYP or been identified for improvement or corrective action. These states did little to focus the pool of potential CSR schools.

However, federal guidance also permits states to set their own more explicit eligibility requirements, and many states have further refined their provisions to focus on a specific subset of schools. Such was the case in half of the states in our sample. In states with highly focused eligibility rules, state officials described the evolution of their approach as part of an overall policy refinement, intended to encourage substantive and sustainable reform. Some eligibility restrictions were revised to encourage school-level programmatic coherence: for example, some states limit Reading First schools' participation in CSR to avoid overwhelming them with program requirements. One state official described,

> When you have a low-performing school… and we overload them with any number of grants, it may be CSR and Reading First or CSR and 21st Century Schools, there is a limited amount of time in a workweek, and so when Reading First requires or mandates a certain amount of training or requirements, and when CSR has other requirements, one of them just falls by the wayside, and typically based on my experience that has been CSR… So I'm trying to coordinate now, and we're going to prioritize those schools that don't have existing reforms in their schools.

Several states elected to focus on schools in "dire need:" those identified for restructuring or at the lowest level of state accountability designations. In contrast, other states focus on schools at the other end of the improvement spectrum, targeting schools that were only recently placed on academic watch or probation. As one state official explained, "There's a far greater benefit for schools that have had a readiness to benefit as opposed to taking the lowest performing schools, which was what we've done in the past."

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These schools had not yet been identified for improvement, and CSR was viewed as a mechanism to stave off potential identification in subsequent years.

In a few interesting cases, states opted to target schools that were Title I-eligible (but not receiving Title I funds) and identified for improvement. These schools, while still impoverished, did not benefit from Title I dollars so CSR was perceived as an effective mechanism to ensure these schools had access to another school improvement strategy and the associated supports. One state official recalled, "This year we said, 'we're giving a lot of money to Title I schools, so who are we going to address with CSR money to?' So this year we decided to give the money to schools which are Title I eligible, but are not Title I served, and in need of improvement under NCLB." Finally, a few states focused eligibility on specific levels—only high schools, or only middle schools—or a specific subject.

Support for CSR

Using the Application/Planning Process to Build Capacity

In addition to formal eligibility requirements, many states were concerned with targeting schools that had at least a minimal level of capacity to support reform, or possessed a "readiness to benefit" from the funds they would receive. One of the most common and fundamental challenges states encountered in developing their approaches to CSR was the fact that they were dealing with high-poverty, low-performing schools which often lacked the capacity to develop a comprehensive school reform plan that was (1) compatible with their particular needs and (2) capable of being successfully implemented. Federal policy restricted use of CSR grants to implementation support only and thereby limited schools' access to resources they could use for needs assessment and planning. In many cases, SEAs found that schools were applying for CSR funds without possessing a clear, well-conceived understanding of how they would actually implement a CSR program and how that CSR program fit into other efforts taking place in their school. As one CSR coordinator explained,

> They're low-functioning schools, and if they had staff with the skills and capacity to write grants and go through that process on their own, they wouldn't be in CSR—they wouldn't be low-performing. So, what happens is, they have an opportunity to apply for money, they have a limited time in which to apply (4, maybe 5 months), and they slop together a proposal…There is not a readiness on the part of the school; there's isn't a comprehensive look at what they are doing in a comprehensive way so that they can be good consumers of these funds and technical assistance.

Many SEAs recognized early on that for CSR to serve as an effective capacity-building strategy in their state, the schools they were targeting typically needed assistance in creating an appropriate CSR plan and in preparing school-level stakeholders to implement that plan in an effective manner. To address this issue, some states established policies to promote collective stakeholder support for CSR; such policies included required levels of teacher buy-in and requirements for district representatives to attend state CSR meetings.

For example, some states used statewide school improvement planning processes to aid in schools' development of CSR plans. One state coordinator described CSR as part of the state's system for creating Title I schoolwide improvement plans: "All the funding sources and all the efforts are integrated into one plan. CSR is part of that." Because the state connected CSR to this process, applicant CSR schools benefit from state training in identifying the root causes of their achievement gaps and corresponding needs to be addressed in their CSR strategy. Other states were less successful in their attempts to incorporate CSR into their system for school improvement planning. One state targeted CSR funding toward schools

entering its special assistance program, which provided coaching as well as needs assessment and planning assistance to schools identified for improvement. When the requirements for the state program clashed with the requirements for CSR, schools became overwhelmed with excessive mandates and time constraints. At the time of our data collection, the state was in the process of adjusting this strategy such that schools would go through the state planning assistance program first to create a comprehensive improvement plan and then have the opportunity to apply for CSR funding to continue those efforts.

Technical Assistance for Grant Writing

In addition to adapting their application procedures, states created unique approaches to provide schools with technical assistance during their actual grant writing. Because the targeted schools typically begin the CSR process with very low capacity, they often lack access to skilled grant writers to complete the lengthy CSR applications. One CSR coordinator perceived the daunting requirements of these applications to be the principal reasons for which schools were not applying for CSR. "I'd start talking about CSR and what the requirements for that were, [and] people's eyes would glaze over; it was daunting enough for them to write an improvement plan, and CSR just kind of put them over the edge," she explained.

To improve schools' chances of writing successful grant applications, SEAs have developed a range of techniques to both familiarize schools with CSR as a general school improvement technique and to aid schools in writing thoughtful, high-quality CSR proposals. While nearly every state CSR program answered schools' phone and email requests for information about the grant opportunity, about two thirds of the states in this sample also held statewide workshops to explain their CSR application requirements. One state with a particularly in-depth approach to grant-writing technical assistance offered a series of workshops to discuss the application requirements but also how to conduct a needs assessment, how to connect that needs assessment to a school improvement plan, and how to align state standards and policies to that school improvement plan. Several states also encouraged schools to bring drafts of their applications and facilitated peer review sessions to improve the applications' quality.

CSR coordinators from about one third of the states in our sample described working individually with schools to facilitate their grant-writing process. One CSR coordinator explains the use of individualized assistance as a means of guiding schools in the right direction:

> We find that a lot of schools really start out on the wrong foot. They start out telling you all the stuff that you really don't need to know, and it doesn't support anything. The more that you can work with them and say, "OK, this is what you are writing, but you need to go back to your staff and you need to do a lot more work". . . If you can work with people along the way and just get them focused on the right strategies and methods they need to use to even put an RFP together—the kind of work they need to get stuff in writing down—I find that that's very helpful when they start actually putting pen to paper.

Many SEAs, particularly those conducting CSR competitions with large numbers of applicants, simply did not have the manpower to provide this type of individualized assistance, but some such states were encouraging schools to form partnerships with local universities and/or educational resource centers to provide the grant-writing assistance they cannot.

Technical Assistance for Implementation

State patterns in the provision of technical assistance for CSR often mirror their overall system of support. Among the states in our sample, several had systems of support that relied primarily on decentralized, regional support agencies. States that traditionally centralized most support strategies within the SEA

tended to do so for CSR activities as well. A few states collaborated with regional educational laboratories to provide technical assistance to CSR schools, but this was a somewhat less common approach.

Although many states provided technical assistance for the grant writing, fewer states provided technical assistance to support the implementation of CSR. The most active form of technical assistance consisted of school-level site visits with the explicit purpose of determining progress in model implementation. Approximately one third of the states in our sample provided direct, one-on-one assistance to schools that were implementing CSR models through the federal program. A bit more common (approximately one half of the states in our sample) were states in which SEA staff visited CSR schools in conjunction with another required site visit. Said one, "Every year, I visit each of these schools and I often try to coordinate with other activities since I'm a Title I consultant."

In addition, the majority of states in our sample conducted workshops to support implementation of CSR strategies. These workshops focused on such topics as principal leadership, sustainability, coaching/reform facilitation, and assessment practices. While a less focused form of technical support, states often worked to ensure these workshops were meaningful for participants. For example, one state official noted, "We always have teams come, which is a good thing, we don't ask just one person to participate, we usually have a team that can bring information back to the school. We really encourage whole school participation that way."

Interestingly, several states engaged directly with model developers when schools encountered problems. Several officials described cases in which model developers were not meeting the terms of the contract, or were not providing the type of support the school needed: "We were kind of the mediators, we worked between schools and model providers in case there were any problems." In another situation, a state official determined that a school should have never opted to implement a specific model, but the model developer had offered to write the grant and the school agreed to go along. However, the school had none of the existing infrastructure necessary to implement the model, putting them in an untenable situation. In this case, the state requested that the model developer sever the contract and they complied.

Most often, states had several layers of technical assistance, each of which provided a slightly different type of support. One CSR director described the set of technical assistance supports that his state provides:

> Let's take what happens after the moment a school gets an award: the first thing we do, prior to the start of their first school year, we do a one-day orientation with them into the comprehensive school reform process. And then, a little later in the summer, for the past several years we have done a two-day data retreat to get them familiar with the potential for data serving them in the decision-making process. . . . The goal annually from my part is to then visit at least two-thirds of the schools to make personal monitoring visits to them and to spend an hour and a half or so to discuss with their leadership team members talking about their implementation and concerns and issues. . . . In our office we also have regional consultants. . . . I have asked them in the past to select a couple of schools to shadow and make an occasional visit to get a sense of the quality of implementation and to find out what technical assistance they may need that we can provide.

Finally, some states simply did not have the resources to provide technical assistance for implementation, either because of budget and staffing cuts, or a large number of CSR schools in the state—too large for them to provide adequate assistance. As one interviewee admitted, "We basically do not do any kind of

technical assistance. . . . The only thing that we do is basically when we're on the phone, and they call and ask us questions."

Funding Strategies

States had considerable decision-making authority in the manner in which federal grant money was allocated to schools and districts. Federal policy required each state-awarded subgrant be at least $50,000 in size and restricts the amount of funding that could be reserved for states' and districts' administrative costs, but all other policies determining schools' grant size is left to states. Of the states in our sample, only two chose to award schools the federal $50,000 minimum in their 2004–05 funding cohorts. Four states allowed schools to request their grant amount as long as it did not exceed a specified maximum. Six states based their funding decision on school characteristics such school size and/or determined need. Three states chose to reduce the size of their schools' grants over the course of the 3-year funding cycle in an effort to gradually reduce schools' dependence on federal funding. Such efforts to wean schools from the federal funding stem from the intent noted in federal policy that CSR grants are merely start-up funds; by the end of schools' 3rd year of funding, their CSR implementation should be sustainable through the use of other local funds.

State policies for CSR funding occasionally emphasized sustainability. Several states encouraged schools' access to other funding sources during the application process. For instance, one CSR coordinator described using a budget that shows "what they're going to be putting into these initiatives out of all the other funding sources in the school, and then we have totals at the bottom so we can show that CSR is just a small piece of all of the money that is going into that particular school." In some cases, SEA staff performed extensive budget reviews to enforce policies that restrict schools' use of CSR funding. For example, several states limited schools' ability to use CSR funding to cover large budget items such as literacy or math coach salaries so that those resources are not lost once federal funding ends. Some states emphasized the issue of sustainability at annual implementation reviews. One coordinator, perceiving that some schools "don't look past tomorrow if you don't make them," personally offered technical assistance in resource allocation and required schools to report on how they would incorporate other funds after the 3 years of federal funding.

Refinement of CSR Policy

Although many states made efforts to adapt CSR to their state contexts, at the time of our data collection this remained an evolving process. Some states were on a policy trajectory of continuous refinement, but others seemed to be more stagnant, or in decline. Among the states we interviewed, we perceived three major themes with regard to their ongoing adaptation of state CSR policy.

First, some states clearly were responding to lessons learned, and were continually refining their approach to CSR. For example, one state's CSR staff came to believe that the model fairs they were conducting were encouraging schools to simply "try to buy something to fix their problems." The CSR staff then adjusted its model fairs to focus more on the effective strategies that CSR models incorporate and less on the particular models themselves. The state also placed a heavier emphasis on needs assessment and data-based decision-making during its application process so that schools were "not just picking something that looks good."

Other states underwent a minor policy revolution, dramatically shifting the direction of their CSR policy. In most cases, such revolutions occurred when new SEA staff assumed the role of CSR coordinator and implemented significant changes to fit his/her vision for the program. Such changes in CSR leadership occurred in several states in our sample, and in most of these cases, the incoming CSR coordinator had previous experience working in the state's school improvement or accountability division. Two such CSR

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coordinators made efforts to better align CSR with the state's other school improvement policies after perceiving the state's earlier, less integrated approach to be ineffective. One of these coordinators described her work as "moving this huge ocean-liner here. . . . I took over schools and just couldn't figure out why they weren't going anywhere with this;" she then orchestrated a series of changes in the state's targeting strategy, application process, and technical assistance strategies to create a clearer connection between CSR and the states other school improvement programs.

Finally, some states suffered a reduction in resources such that they could do very little to adapt CSR to their state context. In these cases, the state official simply hoped to comply with the requirements of the grant so that he/she could continue to provide resources to the school level, but held little hope that the SEA could do much in terms of supporting these schools. One such official described CSR as a "marginalized program" and explained "as long as I keep the reports going, nobody really seems to care what happens with it. In our state, it's viewed as just another source of money for our schools."

District Methods/Analytic Approach

Data

The district analysis drew from two parts of NLECSR. First, it used qualitative data collected from interviews with district administrators in the following five districts (identified by pseudonyms): Oceanway, Riverton, Everville, Eastwicker, and Dodgeland. A small team of researchers conducted a total of 23 interviews in person at the district central offices over the course of a 2-year period. The first wave of interviews occurred between October 2002 and February 2003, and the second wave ran from February, 2004 through May, 2004. Interview respondents held a range of district-level positions and included chief academic officers, curriculum directors, CSR coordinators, and other personnel in such district offices as curriculum and instruction, professional development, data, and accountability. Researchers structured the interviews loosely around a protocol of open-ended questions that featured the following topics:

- ♦ The district's overall goals and strategies for school improvement
- ♦ The district's involvement in schools' CSR adoption and model selection processes
- ♦ District activities to support CSR
- ♦ Changes that occurred at the district and school level in response to CSR
- ♦ State and district policy alignment regarding CSR
- ♦ Professional development, data-based decision-making, and resource allocation and their impact on CSR

All interviews were tape-recorded, and verbatim transcripts were created from these audio recordings.

The district analysis also incorporated data from the second wave of NLECSR's district surveys which were administered to central office staff in all 21 districts participating in the NLECSR study. We chose to draw from the second round of survey data collection because it offered the most complete set of data and, occurring during the 2002–03 school year, it coincided with the initial round of district-level interviews. While the survey data featured in this analysis are largely quantitative in nature, verbatim responses to short, open-ended survey questions were also used.

Analytic Methods

We began our analysis of the qualitative data by carefully reviewing and coding district interview transcripts for themes relevant to CSR. We refined these themes through a series of subsequent reviews and isolated data related to the following key dimensions: (1) alignment of CSR with other strategies, (2) support for CSR, and (3) CSR policy refinement. We defined these three dimensions at the district level as follows:

♦ **The alignment of CSR** dimension involved how CSR related to the district's overall plan for instruction and school improvement. Specifically, it included how administrators perceived CSR to interact with other instructional policies such as content standards and curriculum requirements as well as the measures districts took to promote coherence between CSR and these policies. This dimension also encompassed policies that influenced schools' decisions to use CSR over other improvement strategies and policies that affected schools' selection of particular CSR models.

♦ **The support for CSR** dimension included information regarding the activities districts performed to facilitate schools' selection and implementation of CSR models.

♦ **The refinement of CSR** dimension related to the evolution of districts' policies and attitudes regarding CSR as well as the outlook for CSR's future in the district. Topics that fell under this heading included how administrators adjusted their CSR policies in response to lessons learned, what they perceived to be the current focus of their CSR activities, and how they predicted their attitudes toward CSR would change in the future.

After coding the data according to these dimensions, we examined the variation in the case study districts' approaches to CSR and searched for patterns among their behavior. We also noted differences across districts to explore how administrators were shaping CSR policies in response to their particular district context.

To identify patterns in CSR support strategies and model adoption policies across a wider sample of districts, we supplemented the qualitative investigation of our five case study districts with analyses using survey data from all 21 districts. First, we developed measures that rated districts according to (1) the extent to which they exerted control over schools' CSR model adoption and selection through the use of mandates and (2) the range of different CSR support activities they offered to schools. To measure districts' policies toward CSR model adoption, we created the following two scale variables: (1) a CSR Mandate variable to indicate the degree of district involvement in schools' adoption of CSR models (i.e., whether the district reported no role in CSR, supported CSR, required some schools to do CSR, or required most or all schools to implement CSR) and (2) a CSR Model Selection Requirements variable to capture the extent to which district mandates restrict schools' CSR model options (i.e., whether the district did not mandate CSR, mandated CSR but permitted the use of any CSR model, mandated CSR and required schools to select from a limited set of models, or mandated the use of a particular CSR model). After creating these district mandate measures, we read through responses for survey items probing why districts required schools to use CSR, including whether these mandates were issued when schools were identified for improvement or when schools failed to make AYP.

To rate districts' range of support activities, we created a Total Support variable which represented the proportion of 29 CSR support activities each district reported providing to schools. We also generated a set of seven additional support variables—Model Selection Support, Funding Support, Community Outreach Support, Networking Support, CSR Implementation Technical Assistance, CSR Evaluation Support, and Contact with Model Developers—which rated districts along categorical subsets of the Total Support measure (see Table 3.1 for a full description of each of these measures).

Table 3.1. CSR support activity rubric

CSR Model Selection Support **(6 items)**	District assists in needs assessment. District organizes model fairs. District provides travel funds to visit CSR schools "in action." District provides written documentation on CSR. District provides one-on-one help in model selection. District helps schools identify models.
Funding Support **(6 items)**	District has funds for CSR schools. District redesigned budget system for school autonomy. District encouraged schools to redeploy money from categorical programs. District realigned spending to support CSR. District assists schools in securing resources for CSR. District provides financial incentives for professional development to support CSR.
Community Outreach Support **(4 items)**	District discussed CSR in an open forum. District provides communication to community. District efforts to involve community. District provides reform evaluation information.
Networking Support **(2 items)**	District facilitates meetings of principals with the same CSR model. District facilitates meetings of faculties with the same CSR model.
CSR Implementation Technical Assistance **(5 items)**	District provides instructional leadership. District facilitates model negotiations. District requires school improvement plan focus on CSR. District increased professional development days to support CSR. District increased common planning time to support CSR.
CSR Evaluation Support **(4 items)**	District staff conduct regular site visits to monitor implementation. District receives written reports from schools implementing CSR. District has established timelines for key implementation activities. District disseminates data on how different models are working in the district.
Contact with Model Developers **(2 items)**	District staff meet with model developers at least once per semester. District staff communicate with model developers at least once per semester.

The first, straightforward analysis involved creating a series of scatter-plot graphs to observe whether relationships existed between the CSR Mandate variables (independent variables) and each of the eight support variables (dependent variables). For example, we charted the value of districts' CSR Mandate level in relation to the Funding Support scale, followed by all other support scales, resulting in eight different relationships. In most cases there was no apparent relationship. However, to each we added a simple regression line to calculate the extent to which a linear relationship existed between each set of variables; the resulting r^2 value informed us of the strength of the relationship between these variables.

Recognizing that nonlinear relationships might also exist among these measures, we supplemented our analyses by searching for patterns among districts with similar mandate and support policies. First, we clustered districts into groups based on their reported CSR mandate and CSR model requirement policies. We then compared the support activities reported among districts within each of these clusters to determine whether specific approaches to CSR mandates and model requirements had implications for district support activities. Finally, we repeated this technique in reverse by clustering districts according to high, medium, and low levels of support to check whether districts offering particularly many or particularly few types of support yielded any patterns with regard to mandate policies.

Lastly, we read through districts' responses to open-ended survey questions regarding their support practices and reexamined interview data related to CSR support in search of additional detail concerning districts' support strategies.

Measures

CSR mandate

The CSR mandate variable was calculated as a scale of 0–3, where a value of 0 indicated that the district played no role in CSR, a value of 1 indicated the district supported CSR but did not require it, a value of 2 indicated the district required CSR in some schools, and a value of 3 indicated the district required CSR in most or all schools.

CSR model selection requirements

The CSR Model Selection Requirements was also created as a scale from 0–3, where a value of 0 indicated that the district did not mandate schools to adopt a CSR model, a value of 1 indicated that the district mandated at least some schools to adopt a CSR model but placed no restrictions on model selection, a value of 2 indicated that the district mandated at least some schools to adopt a CSR and required them to select from a limited set of models, and a value of 3 indicated that the district mandated a particular CSR model in at least some schools.

CSR support

To measure the amount and types of CSR support each district provided, we created a rubric that included a set of 29 support activities organized into the following seven categories: Model Selection Support, Funding Support, Community Outreach Support, Networking Support, CSR Implementation Technical Assistance, CSR Evaluation Support, and Contact with Model Developers. For each category, districts received a score equal to the number of support items they provided divided by the total number of items in that category.[17] Thus, a district that indicated it provided 3 of the 6 support activities included under the CSR Model Selection Support category would receive a rating of 0.5. Each district also received a total support score which we calculated by dividing the total number of support activities a district reported by the 29 possible activities that we probed. It is important to note here that these measures indicate the range of CSR support activities that districts reported and do not capture the frequency or intensity of support provided. Finally, to examine the popularity of individual support activities across all districts, we calculated the proportion of our 21 districts that provided each activity.

District Findings/Results

In the following sections, we continue our discussion of policy alignment and CSR support with an examination of district-level approaches to CSR. First, we explore how the districts in our sample have worked to align and integrate CSR within their overall set of instructional and school improvement strategies. Next, we investigate patterns in district activities to support CSR, with a particular focus on district policies to mandate CSR for specific schools. We conclude with observations on the trajectory of CSR policy within these districts as well as the ways in which these districts refined or adjusted their approaches to CSR.

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[17] In cases where district respondents failed to answer all of the survey questions within a support category, support scores were determined by dividing the total number of "yes" responses by the total number of the survey items within the category that were actually answered.

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Alignment of CSR With Other Improvement Strategies

In an era of standards-based reform and accountability, districts face heightened pressure to ensure schools are meeting standards for student learning and achievement. Accordingly, they have employed a range of school improvement initiatives addressing such areas as curriculum and instruction, assessment, and professional development to facilitate schools' progress toward meeting standards. Since comprehensive school reform by nature stretches across many of the areas in which districts are intervening, several opportunities exist for schools' work with CSR models to conflict with strategies and priorities advanced by the district.

To minimize the problem of competing initiatives at the school level, some districts have taken steps to situate CSR within their overall school improvement agenda. The chief academic officer in one district explained,

> What we've done is we've really done a great job of making sure that the schools and the model providers understand how what they do in the district supports the district's goals, and they have really moved their schools forward with that. That has been a major thrust to say it's not something that's separate and apart from what the district is doing but it is, should be your way of actually supporting what the district is doing [Everville].

This section will examine how district administrators perceived CSR to fit in with other major initiatives and describe some of the steps districts took to align CSR with these initiatives.

Alignment With Core Curriculum and Standards

Although the districts in our sample varied in terms of the tactics and initiatives they employed to support school improvement, their approaches toward curriculum requirements pointed to two general patterns regarding districts' strategies for reform. First, some districts centered their overall plan for school improvement around the implementation of a particular core curriculum or instructional model and typically focused district-provided professional development and other services on supporting teachers' execution of that curriculum. Of the five districts in the qualitative component of this study, three fit this pattern of implementing a districtwide curricular program, and in each instance, district administrators stressed the importance of aligning CSR models with that program.

To illustrate this curriculum-focused approach to reform, consider the mid-sized, urban school district Eastwicker. At the time of our study, Eastwicker was planning to roll out a locally developed curriculum based upon district content and performance standards. One administrator described the centrality of this new curriculum within the district's plan for reform, declaring "The core of the system of course is the curriculum and . . . everything that we do should be aligned with that curriculum. Everything that we do in all of these different offices . . . should support it." Because several schools were already implementing CSR models with specified curricula, the central office was in the process of collaborating with these schools to integrate their current CSR efforts into the upcoming district instructional model. Given the district's commitment to having a uniform instructional model across schools, the district curriculum was to take precedence over CSR model curricula, though the alignment process was intended to emphasize commonalities between both. As one representative from the district articulated,

> We are working with principals and faculty to answer the question, how we could get Success for All, how we could get Voyager, how we can get all these other reform models that we've adopted to make sure that what they outline as the instructional strategy is aligned to the curriculum. That's going to require some alignment of work; it has to be delivered. It has to be thoughtful. We're not going to align our curriculum to

> Success for All. Success for All will have to be aligned to our curriculum, and it can be because after all when one does an analysis, there's a nice crossover of knowledge and skills.

Officials from another urban district that recently adopted a districtwide curriculum expressed a similar emphasis on aligning CSR models with the district instructional strategy. Some indicated that CSR models' compatibility with the district curriculum outweighed even the proven effectiveness of their components in influencing CSR decisions. The Chief Accountability Officer explained,

> I'm not concerned about the program. I'm not concerned about what works. I'm not concerned about that at all. I am concerned about alignment . . . The issue for me always is when you have a variety of reforms that you attempt to implement simultaneously . . . then the first casualty will be student achievement if you have misalignment [Riverton].

To ensure alignment at the school level, the district has instituted several measures during its schools' CSR selection and evaluation processes. For schools applying for CSR funding, the district holds a technical assistance workshop to teach schools how to incorporate CSR into the district-mandated school improvement plan and how to promote alignment with other instructional initiatives like the district curriculum. When teams from the central office perform site visits to monitor schools' progress with CSR, they use a protocol that includes a section regarding the CSR model's alignment with the curriculum. Additionally, the district requires model developers to prove how their CSR model aligns with the curriculum. The district has also, on at least one occasion, sent its curriculum to a popular model developer working with its schools so that this developer could incorporate the district curriculum into its professional development workshops.

The last of our three curriculum-mandating districts, Everville, had recently begun implementing the highly prescriptive Open Court reading curriculum and told a similar story of requiring CSR's alignment with the district-chosen curriculum. Like Eastwicker and Riverton, this district prioritized its own curriculum selection; yet, rather than rejecting CSR as an incompatible strategy, it sought to integrate schools' CSR work into their implementation of Open Court. The chief academic officer describes the district efforts to promote such integration as follows,

> I worked on the curriculum side of the house and pulled together all of the schools that had models and said to them that we were going to make sure that any school with a model focused the improvement effort on the Open Court and to see how the model, the components worked to support that improvement effort. So it didn't matter if they were Comer, it didn't matter if they were Different Ways of Knowing, anything. It had to wrap itself around the Open Court which was the district's reading effort. Then, we charged the model provider with the same mandate, "Help the school make sure that tenets of the model were parallel in terms of making things happen with the Open Court."

Thus, as in Eastwicker and Riverton, officials in Everville opted to continue supporting CSR in conjunction with its new curriculum, provided that model developers and school stakeholders aligned their model with its curriculum to avoid interference.

Other districts avoided mandating specific curricular materials and instead afforded schools wider discretion regarding instructional decision-making. Such districts may have recommended or restricted certain materials but generally supported a range of curriculum models for use in their schools. Yet, despite this flexibility with respect to curriculum, schools still needed to ensure that their approach to instruction fulfilled state and local content standards. An administrator from Oceanway, a district with no

required curriculum but a large concentration of CSR schools, emphasized the need for model developers to calibrate their methods with state content requirements:

> You have to have some kind of cohesive alignment with what's the state's standard for what children should know. That should be the core. And the model developers need to find ways to lay their template on that. Because the bottom line is our kids don't take their assessment, they take the state's assessment.

Thus, even though the district offered schools latitude to implement CSR model-based curricula, it recognized that, due to the demands of standards-based assessment, model developers had to adapt their strategies to cater to state standards.

Integration With Other Reform Efforts: CSR as a Lever

While districts frequently cited the desire to prevent school-level conflicts as motivation for their work aligning CSR with other district reform strategies, several officials also noted the potential for CSR to serve as a lever for bolstering the implementation and effectiveness of other reform strategies. In such instances, CSR was not simply operating in tandem with another initiative but rather became integrated with that initiative or became a means by which to accomplish that initiative.

As described in the previous section, administrators from Everville perceived CSR as a mechanism for "making things happen with Open Court." They further articulated their vision of CSR as an "enabler" of reform, a strategy that ideally "facilitates and in no way detracts" from the district's central Open Court initiative. The chief academic officer for this district described how CSR served as a means for preparing teachers to implement another schoolwide instructional program, "We found that what the models offered to them was an organizing framework to be able to fully implement the Open Court, and we find that those schools that had models were in a better state of readiness for collaborating on what they needed to do." Another administrator elaborated on the ways in which CSR facilitated the implementation of Open Court, explaining,

> Those schools that have been doing a model are already organized to bring in Open Court. They're already organized to bring in any curriculum initiative because they're accustomed to working with each other because most models require that collaboration and teamwork and they've been working with them around that. You have extra hands in the school because part of what we do is we go and we listen to issues of just implementing change period and we help schools to think about that.

The district thus established a connection between its central school improvement strategy and CSR which, by putting into place teacher professional community and support structures, laid the foundation for schools' implementation of Open Court. Hence, in a policy environment characterized by a highly specified approach to instruction, districts can leverage comprehensive school reform's broader capacity-building strategies to support other school improvement initiatives.

In the context of a district with less specified requirements regarding instruction, CSR models can offer schools structures to fulfill more loosely defined district directives. Consider, for example, Dodgeland, a large urban district that grants schools primary decision-making authority over curriculum and textbook selection. When, as part of a districtwide reading initiative, the central office instituted mandatory blocks of instructional time reserved for reading, schools implementing literacy-focused CSR models could use the CSR materials and practices for reading instruction to comply with the district literacy block requirement. One observer from the district explained,

> They're mandated to have reading for two hours a day. There's a general framework of four categories that need to be touched upon but unless the school is using something like an SFA, they are grasping at straws in terms of how do we meet this requirement and maximize that two hour block of time that they're mandated to do as reading instruction.

Accordingly, by providing low-capacity schools with tools for putting a district initiative in place, CSR can blend with other improvement efforts at the school level.

Strategies to Integrate: Targeting Specific CSR Models

In addition to facilitating the crossover of content between CSR models and other reform efforts, districts have established policies regarding schools' adoption and selection of CSR models in order to promote school-level coherence. Everville restricted the types of CSR models that schools could choose in order to avoid models that might conflict with the upcoming implementation of the Open Court reading curriculum. According to one administrator,

> We decided as a district, rather than just have everybody doing everything, and they did make a decision as a district not to do the curriculum- [or] the reading-based models such as Success for All, Direct Instruction, because they were doing the reading series and didn't want anything to compete with Open Court. The decision was made before the Open Court was decided upon, but they knew they were going to a reading program so they said they didn't want something that would be a conflict.

For schools already implementing highly scripted models like SFA, their model was either phased out or used only in an individual student workshop setting. In Dodgeland, the opposite was true: the district limited schools CSR model choices to models that did have a strong literacy focus so that they would facilitate the districtwide reading initiative.

Riverton also promoted use of particular models to emphasize coherence with the district curriculum and other reform efforts. Though the district did not require schools to choose a particular CSR model, schools tended to select a model whose developer had worked closely with the district to align its instructional strategy with the district curriculum. The district viewed this model as "reinforcing what we're trying to do here at the district" and presented it to schools as such. Furthermore, components of this CSR model tended to match with district initiatives such as school reading coaches, and schools were able to use their CSR funding to support a coach.

> Another good reason why people selected America's Choice, they had to have a reading coach, a literacy coach and we recommended a teacher leader for reading. So that meshed. So they had, they could pay for half the person through America's Choice and then they had money in their Title I grant to help reinforce the issue that they have their own literacy person in the building.

Therefore, Riverton administrators perceived this model to be capable of not only minimizing clashes between CSR and the district curriculum but also of facilitating schools' compliance with other district policies. By locating the model within the district policy context in this way, they likely contributed to this model's prominence within the district.

Strategies to Integrate: Targeting Specific Schools for CSR

Riverton further sought to prevent instances of school-level policy incoherence by targeting schools that were not already engaged in potentially conflicting reforms. One official explained how the district would consider declining federal CSR resources for schools already committed to other strategies.

> A variety of these schools that have these CSR grants are Corrective Action schools so from that perspective what we're trying to ensure is that these resources, these supports and these programs are aligned to that school's effort to improve but not competing with the district's major reform efforts so that's why sometimes, in certain instances, it's better to say no to a set of resources if they're going to be misaligned.

Recognizing the need for schools to have the capacity to implement a CSR model before encouraging or requiring them to engage in this type of reform, the district reserved CSR for schools where it would have a greater likelihood of success and chose other improvement strategies for schools perceived to be less fit to implement. The district also used the federal CSR grant program to prioritize the use of CSR in schools that could most benefit from available CSR resources. One interviewee explained,

> What has happened in the past . . . our high poverty schools get googogs [sic] of money, even over a million dollars. And some schools that have very low poverty get very little money. So my boss's idea was to offer these grants first to those schools that get little money for reform because schools that get a million dollars, they should be doing something worthwhile with that money . . . So we try to match it with the needs of the school so that they could bring about a reform in their school program.

By capitalizing on the availability of federal CSR money, the district treated CSR as a tool for financing reform in schools with less access to other resources.

In order to pinpoint the schools they felt would benefit most from comprehensive school reform, some districts issued mandates compelling certain schools to adopt a model. Of the 21 districts in the overall NLECSR sample, 10 reported requiring at least some schools to implement a CSR model in 2002–03. In each of these 10 cases, the district's CSR mandates were in some way associated with the district's accountability system. Nine of these 10 districts required schools with a low accountability ranking, particularly those identified for improvement, to adopt CSR as a school improvement strategy. The remaining CSR-mandating district targeted schools that failed AYP, as did six of the other districts with CSR adoption requirements. By using accountability designations to target schools for comprehensive school reform, these districts positioned CSR as a tool within their overall accountability system, similar to the way in which many of the SEAs in our sample took steps to incorporate the CSR funding program into their overall accountability system.

Supporting Schools During the CSR Process

Districts developed approaches to CSR that fit their district culture and needs, and in doing so, some were more active than others. One way in which districts exercised control over the CSR process was through the adoption process, first by controlling which schools implemented CSR, and second by restricting the CSR models that schools could adopt. Another way in which districts sought to ensure that CSR met their needs was to provide a variety of supports that promoted full and smooth implementation of CSR. We found that districts that mandated CSR and districts that were more restrictive in model selection also tended to be more supportive of the CSR process in general. The following section will discuss support among all districts that mandate CSR and support among a subset of these districts—districts that mandate CSR and require schools to select a model from among a limited set.

District Mandates and Support

NLECSR survey data indicate that when districts mandate the adoption of CSR models, they also tend to provide more support for CSR overall.[18] When we plotted the district mandate variable against the total support variable, the resulting regression line yielded an r^2 value of .21. As we have seen, districts that mandate CSR often do so to address concerns over accountability and AYP. If districts are using CSR as a strategy to increase student achievement, they may have a vested interest in the success of the program, and therefore, offer more support. For example, all or nearly all mandating districts redesigned the budget system to allow for greater school autonomy, realigned district spending to support CSR,[19] and collected written reports from schools to monitor the implementation of CSR, whereas only between 46 and 54% of nonmandating districts provided the same supports.

In particular, districts that mandate and require schools to choose from a limited set of models provide the highest overall support.[20] Administrators may require that schools implement certain models, which they perceive to align well with district curricula or to address district-specific challenges, such as teacher and student mobility. These districts rank particularly high in funding support, community outreach support, networking support, and model selection support (see Figure 3.2). All of these most restrictive districts arranged meetings among faculty members whose schools shared a common reform model, a service offered by less than two thirds of the remaining districts. For example, one such district required monthly meetings for schools using each reform model. These districts also all provided public forums to discuss the CSR process with the community prior to model selection, an activity provided by just over half of the remaining districts. In Oceanway, for example, school management teams composed of community members, parents, and staff investigated and recommended models prior to adoption. There was also a willingness among these districts to facilitate negotiations with model developers, a move most likely prompted by a desire to ensure alignment between models and curricula. All but one of these districts communicated with model developers at least once per semester, compared to roughly half of all other districts.

Districts that mandate CSR and require schools to choose from a certain set of models provide particular help in model selection that is rarely offered by other districts. Although these supports are infrequently provided by the whole sample, all but one of the districts that require schools to choose from a limited set of models provided one-on-one assistance in model selection, and all held model fairs. One district explained that the central office "presented the reform models to the schools." Another district felt that their model fair promoted alignment to the district curriculum. A third district explained that, when they first started CSR, they specifically chose models that would not compete with the curriculum program they were implementing.

On the other hand, none of the other districts that mandated CSR held model fairs. In one interesting case, the district administrator described how schools found models "despite a disinterest . . . on the part of the central office." Although the district mandated CSR for schools identified as low achievers, "there's never been a push to share those models, to encourage schools to adopt a model and so schools are, have basically been totally on their own in terms of their initiative and finding examples of models." This district was also the only mandating district that did not provide funds for visiting CSR schools in action.

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[18] There were three exceptions: two districts (Arborwood and Dodgeland) that mandated CSR but had lower support, and one (Gableton) that did not mandate CSR but had high support.

[19] One mandating district did not provide this support.

[20] The five districts that required schools to select from a limited set of models were among the six districts that ranked the highest in overall support.

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Figure 3.2. Support in mandating districts that require schools to select from a set of models vs. support in all other districts

Percent of districts in category participating in activity
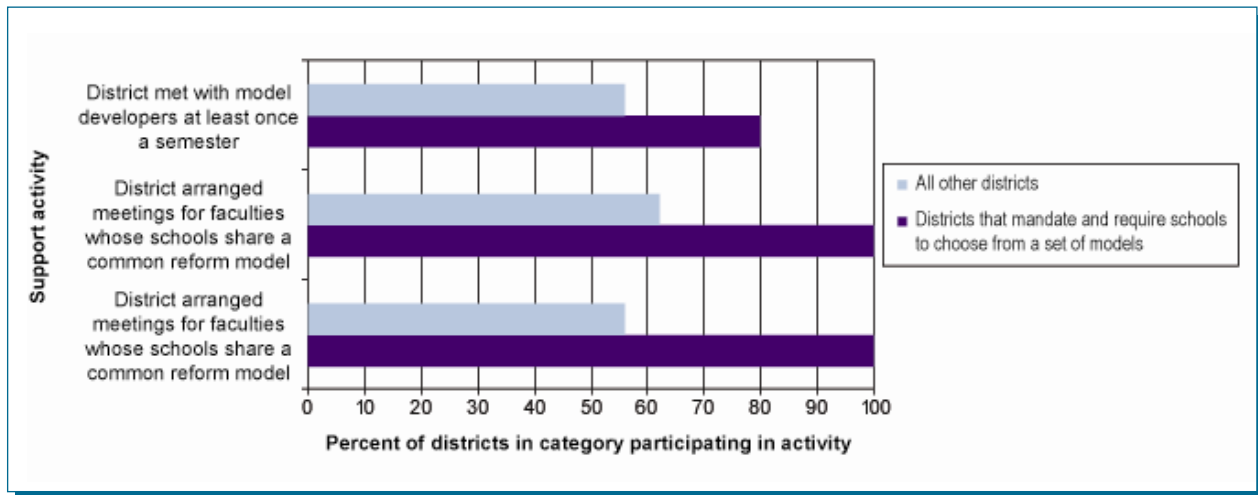
District Support Activities

Survey data suggest that districts provided a wide array of support activities. Among the CSR support strategies measured by the NLECSR district survey, districts reported providing from 50 to 93% of the different types of support, and the average level of support was 74% (see Table 3.2).

While districts were highly supportive overall, some support activities occurred more frequently than others. One hundred percent of districts[21] assisted schools in securing resources for CSR. Just over 95% of districts had specific funds for CSR and provided instructional leadership throughout the implementation of CSR. A similar proportion of districts engaged in efforts to involve the community in the reform process. Districts had various strategies to involve the community, including local school councils, community improvement teams, school site meetings, and town hall meetings. Other districts included parents on their school improvement teams. Ninety-five percent of districts also sent their staff onsite visits to monitor implementation; however, the frequency of these visits ranged from once a week to once a year. Respondents reported that site visits focused on level and fidelity of CSR implementation, student achievement data, classroom performance, professional development offerings, instructional strategies, and alignment with content standards.

In contrast, some supports were provided infrequently (see Figure 3.3). Only 29% of districts held model fairs and 48% provided one-on-one help to schools during model selection. Districts that held model fairs reported that they were widely attended by district and school administration, teachers, parents, community representatives, and sometimes students. Districts that provided one-on-one consultation during model selection usually did so upon request or as needed by the school. Assistance focused on needs assessments, researching models, securing external partners, writing grants, identifying best practices, working on budgets and contracts, and locating schools to visit that were implementing models. With regard to the implementation process, only 32% of districts increased professional development days, and one third increased common planning time to better support CSR models. While over half of district communicated with model developers, only 38% met with developers at least once per semester.

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[21] All percentages are based on the number of districts that answered the item and may not be equal to the total of 21 districts.

Table 3.2. Districts' total support scores

District	Percentage of total support activities provided
Everville	50
Rainfield	55
Arborwood	62
Mount Violet	66
Roseburg	69
Huntertown	69
Dodgeland	69
Lilyport	71
Hickoryville	72
Meridian	72
Westlake	72
Kentland	74
Jasmineton	76
Oak Valley	79
Riverton	79
Pineford	79
Gableton	83
Elm County	83
Eastwicker	90
Oceanway	90
Greenbower	93

Figure 3.3. Support activities provided most often and least often

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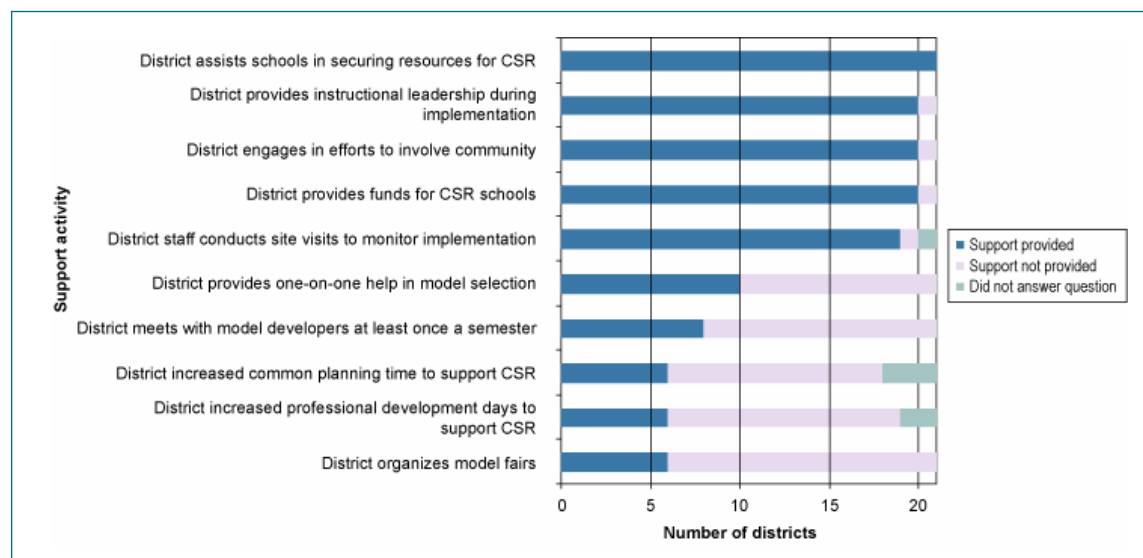
Altering and Refining District Strategies for CSR

The Future of CSR

CSR policies are shaped in an ever-changing atmosphere that is unique to each district. With high pressure for student achievement, districts have moved to change or discard initiatives that are not quickly perceived as effective in raising student test scores. Faced with this pressure to find the solution to student achievement challenges, districts are evaluating the extent to which CSR meets their needs. Among the NLECSR case study districts, we found that one district was refining its approach for the continuation of CSR. In this district, CSR was an active process, with the district refining the reform methods to increase efficacy and promote sustainability. A second district was undecided as to whether to continue with CSR, and was in the midst of investigating best practices from the reform models. The remaining three districts were phasing out CSR.

Refining CSR

As districts implemented CSR, many engaged in policy refinement as they learned from their successes and mistakes, and aimed to make CSR work at the district level. One such district from this study was Riverton, which learned from their initial interactions with reform model developers and used that knowledge to refine their approach to later negotiations. After finding that some model developers failed to deliver on their promised support, the district learned to "have everything in writing." District personnel noticed that "when we first started, I think they all decided they would see what they could get away with, like not showing up for staff development or saying they were gonna send five people and one person showing up," but once the model developers realized that the district "[kept] a tab on those things," they began to follow through on their contracts. The district also became more firm in the negotiation of the contracts. As the district administrator told principals, the model developers "don't tell you what to do; you mutually agree…this is our money and we will use it the way the school best sees fit, not the way this individual developer thinks it should be used." The administrator cited one particular example in which the district backed the school in refusing to pay the cost of a year-long contract when the work period was shortened to 6 months because of a funding delay.

Perhaps because this district has worked to improve and refine their approach to CSR, they are working to sustain reform, even as grant cycles conclude. Indeed, the district has "urged schools, after the three years [of the CSR grant] have finished, . . . to continue," and many schools have used their own funds to do so. Although some schools have not maintained their affiliation with the CSR model developer, district administrators have observed that many CSR practices have been integrated and institutionalized at the school level.

Indecision Regarding CSR

By 2002–03, one case study district was undecided on the fate of CSR. One district administrator described the status of CSR in Dodgeland:

> [W]e're looking at it closely . . . I think what we've tried to do is really be thoughtful in what we're doing and look critically at data. Look at what has worked successfully in other districts and really build programs that incorporate those features. If we find something's not working we [say], "Let's get out of this one."

The administrator further described the district's approach to evaluation: in the cases of models that have not had an impact, "we hope to be able to gather enough information to really understand why and if it's something that can be reconciled and whether or not we need to look in other directions for other

supports." An example of this strategy can be seen in a reform model that schools stopped using because it was not meeting their needs, but which has returned to the district after making some changes to address the schools' concerns. Although the district said it would stop using models that it decides are not working for its schools, it appears that district officials have not yet ruled out CSR altogether. One official thought that "there are probably situations where we may actually adopt [a model] for some of our lowest performing schools who don't have the internal capacity to support the rigorous work that we want occurring." However, the model must be "appropriate" and "aligned with our new district priorities."

Phasing out CSR

Finally, three districts were already phasing out reform models. One case study district described their efforts to "streamline our program . . . to rid ourselves of those [efforts] that are not proving themselves." Another district likened their approach to refining district reform as a housecleaning: "you end up with really a very cluttered school program . . . so there was a real effort to clear some of, to clear all of it out quite frankly, and a lot of CSRDs went with it." According to this district administrator, 75% of schools operating CSR models through CSRD grants dropped the models by 2002–03.

District administrators provided several reasons as to why schools discontinued their CSR models. Both teacher turnover, which presented challenges for training and program buy-in, and administration changes, wherein the new principal does not support the model, were cited as reasons that models were phased out. In fact, two district officials attributed the success or failure of models to "how the staff is working in concert . . . the dynamics, the stability of the school, the buy-in of the staff, the ability of the leadership to really engage them" rather than the characteristics of the models themselves. Schools also complained that they had to spend too much time on "administrative paper, business time with [district] staff, which drains them of time and energy."

Another key concern, augmented by NCLB accountability, was pressure to quickly produce results; as one administrator said, "either it is something which can be used to help kids' achievement this year or forget it." In one focus study district in particular, administrators and educators perceived that the most frequently adopted models were poorly aligned with the main accountability test, and because of this, schools failed to produce expected gains.

Connecting State and District Strategies

As states and districts each developed strategies to assist schools' implementation of CSR, policymakers at both levels encountered similar issues related to promoting policy coherence, providing useful support, and refining policies to better suit school, district, and state needs. Often, state and district roles intersected, as states urged districts to recognize and support schools, and as districts benefited from the funding and technical assistance that states provided. The intersection of these roles led to different state-district dynamics: in some cases, states and districts reported similar levels of engagement with CSR while in other cases one level seemed to compensate for the other. Some states and districts made efforts to collaborate and to align their CSR strategies to best support school needs, but others encountered situations where state and district CSR policies were at odds with one another. This section will explore how selected state–district pairs from the NLECSR study interacted with regard to policy integration, support, and refinement.

Alignment and Integration

State and district officials typically expressed similar concern over minimizing any interference resulting from schools' engagement in multiple reform efforts. Recall, for example, Everville, where the districtwide implementation of Open Court stimulated efforts to align all CSR models active in the district

to fit with the new curriculum. Administrators in Everville promoted the continued use of CSR models as a means of facilitating the Open Court initiative, hoping the two strategies would work in unison to constitute schools' means of improvement. The view that CSR models should serve as one integrated component of schools' total reform efforts echoes the vision espoused by Everville's SEA. The CSR coordinator for this state explained, "When we orient schools on that first occasion after they get a [CSR grant] award, we make it very clear to them that they should have one school improvement process and it ought to be named comprehensive school reform and then any other initiatives that are going on in the district would come under the umbrella of comprehensive school reform."

Furthermore, both state and district officials advised against implementing curriculum-centered CSR models in schools using highly prescriptive curriculums such as Open Court, which might conflict with the CSR model's instructional plan. To avoid such conflicts, the district explicitly restricted schools' selection of curriculum-based models that were not aligned with Open Court. At the state level, the CSR coordinator described attempts to prevent schools from encountering discordant curricula as a result of their participation in multiple federal programs:

> It would be a problem to impose a Reading First grant on top of a CSR grant—not that we don't have a few schools doing it because we do—but it has to be pretty artfully done. It would be a mistake, for instance, to have an SFA implementation and an Open Court implementation going on in the same building to satisfy CSR and Reading First. We have an obligation internally and we do have these discussions periodically about that point at which programs interface and how we manage that effectively.

Thus, in the interest of promoting instructional coherence in Everville schools, officials at both the state and district level placed limitations on schools' adoption of potentially competing instructional strategies.

In addition to emphasizing CSR models' accord with other school improvement and instructional processes, both state- and district-level administrators sought to ensure unencumbered implementation of CSR by targeting particular schools in which CSR was perceived to be the most effective strategy. The state CSR coordinator responsible for Everville described efforts to engage districts in the CSR process to prevent them from imposing additional misaligned improvement initiatives. He explained, "We want the district to have an awareness [of schools' CSR implementations] because many of them lose sight of the fact that schools in their district already have a school improvement process going on and that they have to honor that and if they fail to honor it, which we've had happen on occasion, we consider pulling funding."

Everville's district officials acknowledged the tension between their desire to have schools continue with CSR to maintain the often sizable CSR grants and their desire to see schools engaging in what they perceive to be the most appropriate type of reform. One district administrator noted this concern, particularly as it related to the district's "housecleaning" of ineffective CSR programs: "I know there was a lot of discussion [about policy alignment] among the state when we were training . . . I think it assisted in a compromise where . . . if the school can show that they have been progressing, achieving and they have a model, go ahead." Thus, in determining how CSR fit into their strategy for school improvement, the district weighed the option of receiving state CSR funding and technical support against the perceived utility of continuing with CSR implementations in particular schools.

Support

States and districts provided various means of support for the CSR process to districts and schools in their jurisdictions. Our analyses ranked both states and districts to determine those that provided the most

support activities and those that provided the least. Sometimes, a state and its districts provided similar levels of support, whether it was a high level of support, a low level of support, or somewhere in between. Other states were at odds with their districts, with one education agency providing a high level of support while the other provided very little. This section will discuss the types of support provided in two state-district pairs representing different patterns of support.

Some states and districts reported similar levels of engagement with CSR, whether relatively low or fairly high. An example of the latter is Riverton and its SEA. Both the state- and district-level agencies were among the most supportive in our sample. The state focused much of its assistance on the activities preceding the disbursement of CSR grants, beginning with a series of mandatory workshops for schools and districts interested in CSR. After schools attended the workshops, according to one State official, "the extent of their assistance is really up to them. Some schools ask for a lot of assistance in putting their RFP together and putting their needs assessment together, and others you don't hear from." One requirement of the proposal process was to conduct a needs assessment to use in making decisions about reform. The state held "a lot of workshops on putting together comprehensive needs assessments, ensuring that schools are taking at least 6–8 months pulling this information together . . . so that when they start making decisions…they're making them based on the most data that they can possibly have . . ."

Likewise, the district of Riverton also reported assisting schools in conducting a formal needs assessment. This assistance, however, came not in the form of workshops, but through site visits, a review of state testing programs, and help during the school improvement planning process. Thus, the state and district provided complementary strategies to provide comprehensive assistance in conducting a needs assessment. Schools could also request individualized assistance from the state CSR program manager during the grant-writing process. She said, "some schools, more this year than ever, have asked me to look at different sections . . . and see if they have the right information." The high degree of state assistance seemed to be effective, as the CSR program manager was "happy to say that [schools] that actually do ask for the most assistance in all cases have gotten their grants approved."

Pineford and its SEA present a different example of state and district support. Pineford was among the most highly supportive districts, based on survey data, while its SEA was one of the least supportive. It appears as if the district of Pineford compensated for the lack of support from the state by offering a high level of district support for CSR. For example, the state offered minimal assistance during the grant-writing process, and guidance on selecting CSR models was sparse as well. The state simply advised districts and schools to select a model based on scientifically based research and that follows the 11 components of CSR. The district, however, provided further assistance to its schools. Pineford assisted its schools in conducting needs assessments by providing the schools with workshops, training, and data. The district provided funds for teachers, administrators, specialists, and parents to travel to schools already implementing models in order to see CSR in action. Finally, the district also provided written documentation on different CSR models and helped schools to identify the models that were aligned with district standards and assessments.

Pineford also rated high on our survey index of support for implementation. In contrast, at the state level, there was only one person working on CSR, and state support for implementation was provided essentially "when they ask for it." The district, on the other hand, provided a great deal of support during implementation. Pineford communicated and met with model developers at least once per semester and facilitated negotiations with models. They facilitated meetings between principals and faculties in schools using the same model. The district provided instructional leadership to teachers throughout implementation, and increased the amount of common planning time for teachers to better support CSR. Finally, Pineford required that school improvement plans focus on design implementation. The state

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supervisor also remarked, "we encourage [the districts] to support [CSR] . . . the district needs to pitch in for substitutes or . . . funds." And Pineford did so, providing 83% of funding supports, including providing district funds for CSR schools, assisting schools in securing resources for CSR, and realigning district spending levels and patterns to better support CSR. Overall, it appeared that Pineford's high level of support for CSR compensated for the low level of support from the state.

Refinement

As we have seen, districts and states have had different trajectories in their evolving CSR policies and practices. In some states, CSR policy stagnated; in others, it underwent a dramatic change. Many districts, at the time of our study, were uncertain of the future of CSR or were phasing it out. Still other states and districts engaged in continual refinement of CSR. Policy changes within a state are likely to influence policy or practice in districts, and both states and districts placed an emphasis on similar themes during the implementation of CSR. This section will explore the connections between state and district level changes to CSR policies and practices, specifically within one state–district pair, which continuously refined their CSR process.

Both the Riverton district and its SEA remained open to refining their implementation methods in order to ensure they were best meeting state, district, and school needs. As described earlier, this state altered the focus of their model fairs because they felt that a focus on the models as commercial packages encouraged schools to think that they could buy something that would fix all their problems. Their new "strategy for design fairs is that we just have people talk about the kinds of things that work without really buying into a specific model." This new focus on reform strategies forced schools to think about what they would be putting in place. Riverton, too, learned from early mistakes. District respondents became more firm with model developers when they found that the developers did not always follow through on their promises.

Likewise, both state and district officials described a parallel emphasis on needs assessments and data-based decision making. As the state official explained, "We started to focus less on what were the strategies that were going to be put in place and more on the needs assessments, finding out what exactly it is that doesn't work in your school." The district also stressed similar issues. District officials told schools that, when negotiating with model developers, they should focus on "what are [the school's] needs and how are [the model developers] gonna fulfill those needs." Although the district recognized how important it was to conduct needs assessments and use data when planning school reforms, officials felt that the schools were lacking the capacity to analyze the data. One official stated, "While schools may be aware of the data that they have, they have no systemic way to approach it." Perhaps as a result, the state began to offer "a lot of workshops on putting together comprehensive needs assessments" to aid schools in data-based decision making.

State actions can affect operations at the district and school level. When the SEA started encouraging school districts to put forth larger grant requests, Riverton and its schools responded. The state CSR program manager "encouraged [districts and schools] to look really realistically at their budget . . . and not to cut themselves short." Many districts had been requesting the minimum of $50,000, thinking that larger grants would not get funded. The state wanted districts to consider the real cost of the reform they were trying to implement. Riverton explained that the schools that received the earlier CSR grants were funded at the minimum, but the high schools who received later grants "got big chunks of money . . . because they said they needed more money to bring about some worthwhile reform and you can't do it with $50,000." Thus the districts' change in funding strategy seems to be a result of the clarification of policy at the state level.

Discussion

School districts and SEAs can have a potentially important role in shaping the success—or demise—of CSR at the school level. While it is important for states and districts to foster an administrative context that facilitates CSR, the NLECSR data suggest that it is more critical that they limit conditions that would inhibit successful implementation of CSR.

Indeed, there are many state- and district-level conditions that can make CSR implementation even more challenging. Among these is the proliferation of competing (and distracting) reform strategies which divert school staff from focusing on CSR. This is particularly problematic in high-poverty, low-performing schools that may be eligible for numerous improvement grants but lack the capacity to carefully select reform strategies. Hence, a primary tactic among state and district CSR administrators in the NLECSR sample was to seek coherence and alignment among CSR and other approaches to school improvement, including those that were districtwide (such as curriculum) and those at the school level (such as Reading First initiatives).

As we have seen, both states and districts promote school level coherence by targeting which schools were to receive CSR grants. Some states and districts crafted eligibility policies that limited the participation of schools that may have initiatives or curriculums that would conflict with CSR. In some cases, both states and districts looked for schools with the capacity to implement large-scale reform or schools that had not had many opportunities to receive federal grant money. At the district level, another strategy for alignment was through the selection of CSR models that would align with or even promote other district initiatives (and the restriction of models that would not align).

SEAs operate at the macro level of the educational process, yet state actions shape schools and districts. Because states are the conduit for many federal grants, a proactive state approach can help to ensure that these grant monies—and the ensuing efforts by school staff—are not competing. Moreover, states have increasing obligations to support schools that are in the latest stages of accountability designations (most notably those in restructuring status under NCLB) and their level of engagement in the school improvement process has been augmented over the past several years.

The prior literature on district support highlights some key activities that may foster higher levels of CSR implementation. However, among the districts in the NLECSR sample, it seems that few had developed a focused set of support strategies. Rather, districts generally engaged in most of the 29 support strategies about which the district survey asked. One of the key differences appeared to be among a subset of districts—those that required schools to select from a limited set of models—which were more proactive with regard to specific supports, including assistance during the model selection process. State support tended to focus more on grant writing then on implementation support, and, like districts, the level of support varied. Some states and their districts offered similar levels of support, indicating perhaps the prominence, or lack thereof, of CSR. In other cases, it seems that highly supportive districts may be compensating for a lack of support from the state, or vice versa.

Finally, both states and districts can influence school reform activities through rhetoric and public position statements. That is, they may communicate in subtle or obvious ways that particular reform strategies have fallen out of favor, thus discouraging schools from vigorously pursuing CSR. Among these are "housekeeping" districts that are attempting to "clean out" CSR, or states that administer federal grants with the barest required effort. In contrast, states and districts with a viable feedback loop—those that actively engage in policy refinement—are most likely to successfully communicate an ongoing commitment to reform, and to develop strategies that will encourage long-term sustainability of CSR.

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In exploring state and district strategies for integration and support of CSR, we have sought to establish the context of states and districts implementing CSR. While the rest of this report focuses primarily on the life cycle of CSR at the school level, it is nonetheless important to consider the state and district strategies that can influence how the stages of the life cycle unfold. For example, state and district support activities to inform schools about CSR opportunities impact the adoption process in individual schools. State and district resources can provide assistance throughout the implementation process at the school level.

Chapter 4: Initiating Reform
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Introduction

Teachers are an essential component to the ultimate success of school reform; it is they who must commit to the hard work of educational change. For teachers to become substantively engaged in implementation, scholars suggest that they must first "buy into" the general premise of reform (Datnow & Castellano, 2000). They must accept the general premise that reform is important and that the proposed reform in particular is appropriate for the school. Scholars of school reform assert that an important mechanism through which schools can ensure teacher buy-in is the process through which a school selects a reform strategy (in this chapter, referred to as the "adoption process"), including early consideration of teachers' beliefs and values (Weiss, 1995; Eisenhart, Cuthbert, Shrum, & Harding, 1998; Bodilly, 1998; Ross, Alberg, & Nunnery, 1999). That is, if teachers are engaged in and supportive of the decision to adopt the model, they will be more likely to approach implementation with a positive attitude.

This report is grounded in the notion that the metaphor of a life cycle is informative for understanding processes associated with comprehensive school reform. Within this metaphor, the adoption of a comprehensive school reform model is the initiating phase—or the birth—of reform. The initiating phase consists of the decision to undertake reform and the selection of a specific CSR model that will address school needs. This chapter addresses the earliest phases of reform, and examines the extent to which the "birth" of reform shapes its later success.

This chapter seeks to address part of the NLECSR Research Question 3: What supporting conditions and strategies are necessary to effectively implement and sustain reform in schools? The analyses integrate both qualitative and quantitative data to determine the extent to which the quality of the adoption process is indeed a necessary precursor to effective implementation.

The organization of this chapter is as follows. First, we briefly review the literature on the model adoption process, focusing on the constructs that most frequently characterize the quality of the adoption process. Next, we present a theoretical framework for understanding the quality and potential implications of the CSR adoption process. Third, we describe the adoption process from a qualitative perspective, using data coded through an analytic rubric developed specific for the NLECSR study. We then turn to survey data to describe the prevalence of specific adoption processes, and to identify relationships between voting and constructs related to implementation. We conclude with a revised view of the adoption process and policy recommendations based on our analysis of the model adoption process in schools.

Literature Review and Conceptual Framework

The quality of the adoption process has potentially significant implications for the later success of a CSR model, as reflected by the research literature on this topic. In reviewing this literature, we will distill the dimensions that most frequently reflect the quality of the model adoption process, as well as the main phases of this process.

Three core dimensions most often characterize the quality of the adoption process: the degree to which the process is *informative* (providing adequate information to stakeholders), *inclusive* (enabling stakeholders to have a voice in selecting a model), and *legitimate* (ensuring that stakeholders' voice is uninhibited and unconstrained by external pressures). In one of the earliest and most comprehensive studies of the model selection process, Bodilly (1998) determined that "schools were likely to make more significant implementation progress within the two-year time frame studied if they: Were well informed about the designs [and] had free choice among designs" (p. 56). These concepts of information and free choice emerge in other studies, albeit with alternate terminology. For example, Datnow (2005) concludes that a more "participatory" adoption process is more likely to foster enthusiasm and support for implementation (p.11). Writing of the Success for All model, Slavin and Madden (1999) note, "We have found that it is very difficult to work in schools in which the staff did not make an overwhelming, informed, and unfettered choice" (p. 8).

However, much of this same literature concludes that the model adoption process is frequently lacking in these key dimensions. A report by the Education Commission of the States (1999) puts it plainly: "Although it seems obvious, many administrators, policymakers and others advocating reform fail to bring teachers to the table early on. . . . Without the active support of a majority of teachers, comprehensive reform is doomed" (p. 16).

Indeed, numerous studies have highlighted deficiencies of the model adoption process. Teachers in reforming schools generally lack time to become engaged in the adoption process and do not feel informed about the models (Berends & Bodilly, 1998; Stringfield & Ross, 1997). Ross (2001) noted that teachers and principals in Memphis, TN, often expressed the belief that the model adoption process was not entirely as flexible or democratic as the district had thought it would be: "Many conveyed the belief that the external models (especially a select few) were 'favored' by the central administration. . . . [They] reported that such models were often hastily selected by schools without a true understanding of their focus" (p. 7). Other studies have reported that teachers were unsure of why their school had decided to undertake reform, selected a reform with little research, or engaged in a voting process that failed to foster readiness for reform (Millsap, Chase, Obeidallah, Perez-Smith, Brigham, & Johnston, 2000; Smith et al., 1998; Smith et al., 1997).

Datnow (2000) conducted a qualitative analysis of the adoption process in a small sample of schools, highlighting some of the dynamics of this process. First, she found distinct patterns with regard to the impetus for reform: In some cases, the district obliged schools to adopt a specific model, and in others, the district encouraged schools to adopt one of several approved models. In still other sites, the adoption of the model was initiated by school stakeholders themselves, with no intervention from the district. In schools in which the adoption process was largely driven by the principal, teachers played a more substantive role—although these reports were not unanimous. Moreover, Datnow reported that 5 of the 7 schools with principal-led reform were still implementing their models. In schools in which the district played a major role, teachers were required to vote for the adoption of the model; despite this, "local buy-in was not as genuine as was hoped, despite the best intentions of district administrators." In some cases, it appeared that the voting process either lacked salience for teachers (some did not remember voting) or was mildly coercive. As Datnow explains,

> In many cases, teachers stated that the reform adoption voting process was not genuine. Either teachers voted several times until the desired outcome was achieved, or they were strongly encouraged to vote for the reform the first time. . . . The vote gives the presumption of buy-in, and allows administrators to later point to the fact that staff chose to adopt the reform. (p. 367)

Drawing from the themes in this literature—including descriptions of perceived problems—we can suggest a conceptual model of the type of adoption process that is most likely to foster implementation (see Figure 4.1). One key feature of the adoption process is the degree to which it is *informative*—that is, the extent to which stakeholders receive access to information on the models the school is considering. Schools' efforts to provide information might be cursory—for example, teachers might listen to short presentations about models during a single faculty meeting. In contrast, other schools engage in a more substantive approach, sending teachers to visit schools implementing models or inviting model representatives to respond directly to faculty questions. In the "ideal" scenario, the information-gathering process should also be inclusive, that is, all stakeholders should have the opportunity to learn about the proposed models.

Figure 4.1. General conceptual model of the adoption process
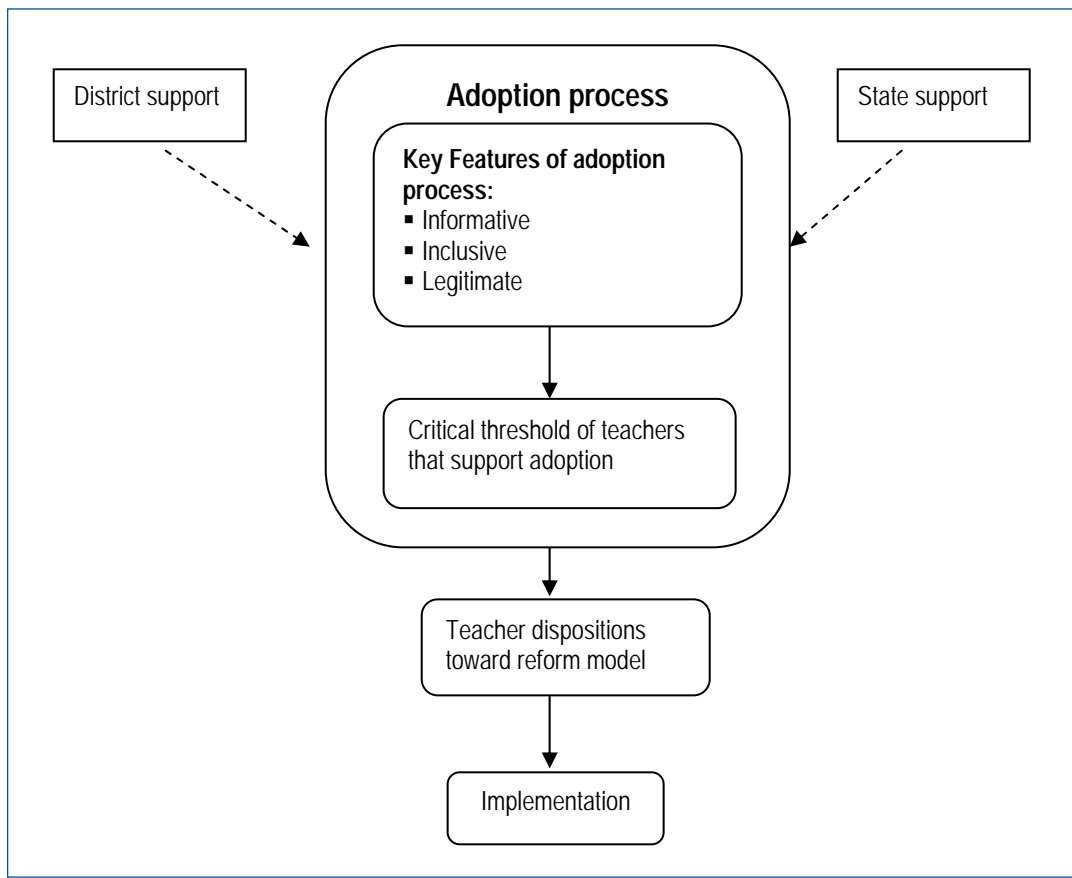
The next key feature—as reflected by previous research—is the extent to which model adoption is *inclusive*, particularly the way in which stakeholders share their opinions with regard to which model is ultimately adopted. Teachers may express their views through different processes, most frequently a vote or a consensus-building process. In either case, scholars suggest that the process should be inclusive; most or all stakeholders should be afforded an opportunity to voice their opinions in an environment that does not stifle dissent. In the case of many models, the participation of teachers in the decision-making process—in most cases, voting for the model—has become a mandated precursor to implementation. The assumption on the part of model developers is that a high percentage of teachers voting in favor of the

model is an indicator of buy-in, and that "the vote itself may create the conditions for coherent implementation" (Tushnet, Flaherty, & Smith, 2004, p. 37). To best support implementation, the literature suggests that this process have *legitimacy,* or be "unfettered;" it should be more than a perfunctory approval of a forgone conclusion.

The current literature suggests that an adoption process that is inclusive, informative, and legitimate is most likely to ensure that teachers have adequate understanding of the model and will generate teacher buy-in (favorable disposition toward the model). These features interact with the existing school culture, most notably principal leadership and the professional community that exists among teachers.

This chapter addresses several specific subquestions, within the context of this conceptual framework. First, how prevalent are specific model adoption practices? Do adoption processes appear to vary by school and/or district context? Next, does the level of CSR implementation appear to vary based on the adoption process? And finally, when schools select and adopt CSR models, are these processes informative, inclusive, and legitimate? That is, do they include dimensions that are most frequently associated with higher quality adoption processes?

Methods/Analytical Approach

Data

Qualitative Data Sources

Analyses related to the model adoption process drew from qualitative data, most notably from site visits to 22 schools in five districts. (While the full case study sample included 32 schools, 10 of these did not yield data on the adoption process.) All 22 schools were visited during the first wave of data collection (the 2002–03 school year) and 10 schools received a follow-up visit during the 2003–04 school year. The primary data sources for the adoption analyses included teacher interviews, teacher focus groups, principal interviews, and interviews with reform facilitators. All interviews were recorded and transcribed for coding. In all, over 200 interviews or focus group transcripts were analyzed for the analysis of the model adoption process.

Quantitative Data Sources

The quantitative component consisted primarily of surveys of teachers, principals, and district administrators, in both schools with CSR models and matched comparison schools. The surveys of teachers were administered during the 2001–02 and 2003–04 school years, whereas the principal and district surveys were administered for 3 consecutive years, starting in 2001–02. Selected questions from all three surveys were used in analyses of the model adoption process. However, analyses that investigated the relationship between adoption and implementation used only the 2002 principal data set, which provided most information regarding the adoption process of CSR programs. Two hundred six principals reported whether a school voted for a CSR model and the percentage of faculty voting for the adoption of a specific model.

In addition, implementation analyses included only schools that were known to implement a CSR program; hence all comparison schools were excluded from adoption analyses. Moreover, focused analyses related to model implementation could include only schools that were implementing a CSR program for which we had the dependent variable, Level of Total Implementation. Level of Total

Implementation was an index that combined all different implementation indices (12) to one aggregated measure of level of implementation.[22]

Analytic Models and Methods

Qualitative Analysis Based on the NLECSR Analytic Rubric

To ensure the analysis of qualitative data was as systematic, balanced, and rigorous as possible, we developed an analytic rubric comprised of key elements related to the CSR reform process. The rubric was designed to facilitate the analysis of school-level support for comprehensive school reform, and includes constructs that are frequently associated with implementation. The rubric included constructs related to the following:

- Stakeholder understanding of the CSR model

  - Comprehensiveness (the degree to which stakeholders perceived the model to be multidimensional)

  - Consistency (the degree to which stakeholders perceived the model to be used on a schoolwide basis)

- Stakeholder perceptions of the CSR model

  - Perceived quality of the model

  - Perceived appropriateness of the model

  - Challenges associated with the model

- School-level CSR processes

  - Model adoption process

  - Quality of developer supports

- Professional resources

  - Quality of principal leadership

  - Presence of professional community for reform

  - Quality of district leadership

Each construct was divided into five descriptive levels to be used in coding. For example, with regard to presence of professional community for reform, level 4 (the highest) read, "Interviewees describe a professional community in which there is trust, communication, and exchange of ideas," while the lowest rating level read, "There is little or no professional engagement or community; commentary is negative." Two rubric components were used in the analyses for this chapter: model adoption process, and

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[22] Comprehensive details on the way in which Level of Total Implementation was determined are provided in chapter 5 of this report.

comprehensiveness. More complete rubric examples for each of these are presented in Table 4.1; the entire rubric is included in appendix A.

To complete the rubric, an analyst would review all interview and focus group data for each school site, coding data that pertained to each construct. For each interview that included data related to a construct in the rubric, the analyst would assign a numeric code and would document a quotation that provided evidence for the coding. With all data coded, we were able to generate an aggregate score for each CSR school, both for individual constructs (such as model adoption) as well as a composite score for all constructs related to the CSR model. The composite score was calculated by first generating average scores from three groups: (1) teacher interviews; (2) teacher focus groups; and (3) principal, assistant principal, and reform coordinator interviews. Because of the pace, timing, and flow of some interviews, there were constructs for which some interviews did not provide adequate data. For these constructs, the analyst would indicate "ND" (no data). Because we did not want to allocate undue weight to data provided by very few teachers, we only averaged teacher scores if were able to glean data from at least half of the interviewed teachers. If an insufficient number of respondents provided data on a specific construct, we did not attempt to generate an overall score. The final score for each construct was calculated as a percentage of the total possible scale, so that all constructs were placed on a scale of 0–100.

Analytic rubrics were completed for all schools from which the team had collected case study data. Two analysts conducted the bulk of the rubric coding. For each school, the analysts discussed the coding in depth, coming to a consensus for each score, and calibrating the scores of all constructs.

A final step helped ensure the validity and reliability of the rubric ratings. In a separate analytic process, researchers reviewed all coded interview data from the case study schools, and prepared detailed case study summaries. Each school profile followed a common template, which included sections on the model adoption process. Rubric ratings for core constructs—including the adoption process and teacher perceptions of model comprehensiveness—were checked against the school profiles. When the team perceived minor discrepancies between each, the ratings were discussed and adjusted, as appropriate. This intensive review process ensured that the ratings reflect, as accurately as possible, the range of implementation dynamics that occurred within the case study schools.

With completed rubric data, several analyses of quality of the adoption process were possible. These included analyses of the overall variation across the sample, clusters within the sample, variation by district, variation by model type, and variation in relation to other constructs.

Quantitative Analyses Based on NLECSR Survey Data

While the qualitative data enabled a systematic analysis of the adoption processes within a small sample of case study schools, the intent of the survey analyses was to determine the extent to which certain practices associated with the adoption process (most notably, voting to adopt a model) have become institutionalized. In addition, we sought to determine whether adoption practices (again, voting) were associated with survey scales that bode favorably for implementation. These included scales related to professional community, clear and shared goals, and professional development, among others.

Table 4.1. Excerpt from NLECSR analytic rubric

Construct Name	Construct Description	Descriptors of Levels	Teacher Ratings			Quotes
			T1	T2	T3	
Adoption process	This construct reflects the degree to which stakeholders perceive the model adoption process to be inclusive, informative, thorough, and adequate to generate buy-in.	**4:** The teacher or principal describes an adoption process that was inclusive and informative, and stakeholders had an opportunity to express their views.				
		3: The teacher or principal describes a process that was generally inclusive, but with some minor shortcomings—perhaps greater efforts should have been made to include all stakeholders—but otherwise was informative. Interviewees express only very minor reservations about the process.				
		2: The teacher or principal describes a somewhat imperfect process—including only some stakeholders, perhaps too short—but with some effort to acknowledge the importance of gaining buy-in				
		1: The teacher or principal described a process dominated by a closed circle of individuals, with little feedback from other stakeholders.				
		0: The teacher or principal describes no stakeholder involvement.				
Comprehensiveness	This construct reflects the degree to which stakeholders perceive the breadth of CSR, or, in contrast, focus on a narrow range of components.	**4**: The teacher or principal clearly describes a range of CSR activities, including professional development, parent involvement, and instruction, as appropriate.				
		3: The teacher or principal describes at least one key component in detail, and demonstrates awareness of other components.				
		2: The teacher or principal describes one or two components, but with thin detail.				
		1: The teacher or principal is aware of some terminology associated with the model, but is unable to provide any additional information about the model.				
		0: The teacher or principal exhibits no awareness of the CSR model or associated activities.				

The survey measures that were specifically associated with the adoption process were limited to a few items. First, the principal survey included items regarding whether the model had been adopted by a vote, through a consensus process, or through another means. If the principal indicated that the model had been adopted through a vote, the following survey question asked the percentage of faculty that had voted in favor of the model. Other model-related items sought determine whether the school adopted a model by choice or by mandate and whether the model was subsequently dropped. The teacher survey included similar items regarding the way in which the model was adopted. Finally, the district survey included questions to ascertain whether the district mandated implementation of one model or a preselected group of models and the type of technical assistance provided to schools during the model selection process.

Thus, through the quantitative data, we were able to analyze the relationship between the following:

♦ Whether or not teachers had the opportunity to vote, and the level of implementation

♦ The percentage of teachers who voted in favor of the model and the level of implementation

♦ The extent to which a critical threshold of teachers supporting the model was favorable for implementation.

In the above analyses, the following variables were used:

♦ The voting related variables (independent variable, whether voting took place) were derived from principals' reports regarding voting related to adoption of CSR programs.

♦ Threshold 80% = 80% or less of the faculty voted for adoption of the CSR. (145 schools had more than 80% voting for adoption.)

♦ Threshold 90% = 90% or less of the faculty voted for adoption of the CSR.

The threshold variables were created in this way because there were very few cases in which less than 80% of the faculty voted for adoption of the CSR program (n = 24). In the threshold analyses, the following were used as covariates:

♦ School-level variables: school size, free/reduced-price lunch, percentage non-English speakers, new principal, middle school, meet AYP, 3–5 and 5 or more years of implementation, adopted CSR

♦ Teacher-level variables: usefulness of developer information, teacher community (social capital variable), teacher report of principal instruction, new teacher, English teacher

In addition, we conducted selected analyses using hierarchical linear modeling. Two types of multivariate analyses were conducted:

♦ The relationship between voting (yes/no) and the total level of implementation

♦ The relationship between voting thresholds (80 and 90%) and the total level of implementation

The relationship between voting variables and the total level of implementation were explored by using a two-level HLM model, including teacher and school levels. The models regarding the relationship between voting cut-off values and the total level of implementation were also conducted by using

multiple imputation to impute missing covariate data. The substantive and statistical results were the same, whether multiple imputation was used or not.

Findings

How Prevalent Are Specific Model Adoption Processes?

How might adoption processes vary by context? As the conceptual model suggests, it is indeed plausible that context—either of the school level itself, or the district in which a school is situated—would shape the process through which a school decides to adopt a CSR model. For example, some districts might openly encourage schools to vote, while others may constrain the process. Other contextual variables, such as district or school size, may result in a greater likelihood that schools will engage in a voting process.

District Characteristics

Overall, our data suggest that voting for a model has become an institutionalized practice: in 8 of the 21 NLECSR districts, *all* of the principals reported that their faculty engaged in a voting process to select the model. In seven other districts, over 80% of responding principals reported voting (see Figure 4.2). The efforts of CSR model developers to ensure that school stakeholders approve the adoption of a model appear to have become firmly entrenched in most districts. There was evidence of some minor district-level variation with regard to voting: in one district only 50% of the CSR schools voted to adopt their model, and in one third of the districts this figure was below 80%. However, no systematic variation was evident among these seven districts in which schools were less likely to engage in a voting process.

Figure 4.2. Percentage of CSR schools in NLECSR districts that engaged in a voting process
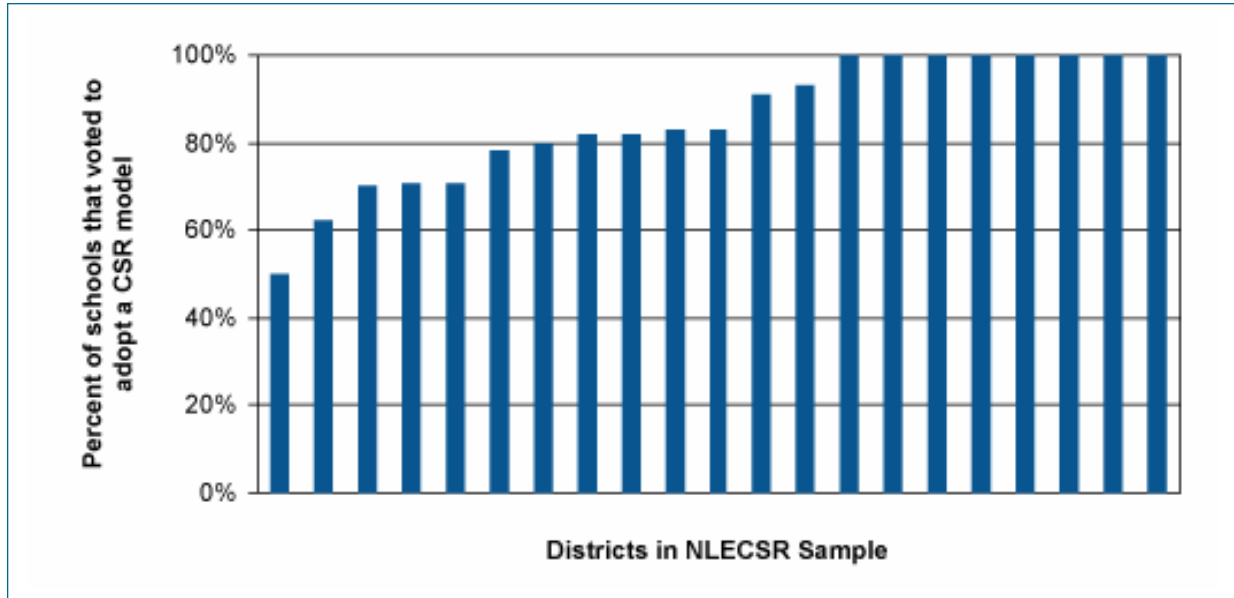
Few district-level demographic variables explain this (limited) variation in voting for a CSR model. As depicted in Figure 4.3, district size is somewhat related to the voting process. In districts with fewer than 100 schools, 94% of the CSR schools reported having voted for the model that they subsequently implemented. In contrast, in districts with more than 300 schools, 76% of CSR schools reported voting. It is possible that in smaller districts, voting norms are more likely to pervade the district, or that

district-level efforts to support specific CSR activities are easy to monitor and enforce among fewer schools. None of the variation in voting was associated with poverty or student demographics.

Figure 4.3. Teachers voting in favor of model adoption, by district size
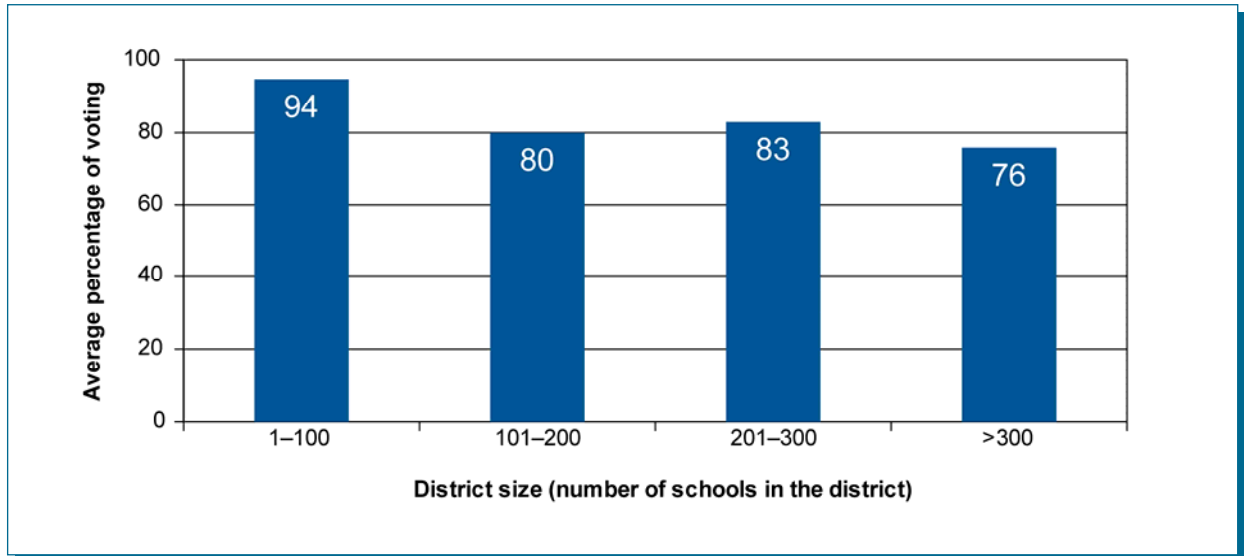
Next, it appears that there is a weak relationship between CSR concentration (that is, the percentage of schools within the district that have an affiliation with a CSR model developer) and voting, although the effect is not as pronounced as for district size. In relation to voting, there is an apparent threshold at which schools are more likely to vote: In districts in which more than 35% of schools have a CSR model, 93.8% of such schools reported voting for their model. In districts in which less than 35% of schools have a model, the likelihood of voting is lower, at 79.6%. (See Figure 4.4.)

Figure 4.4. Percentage of schools that vote for model adoption, by CSR concentration

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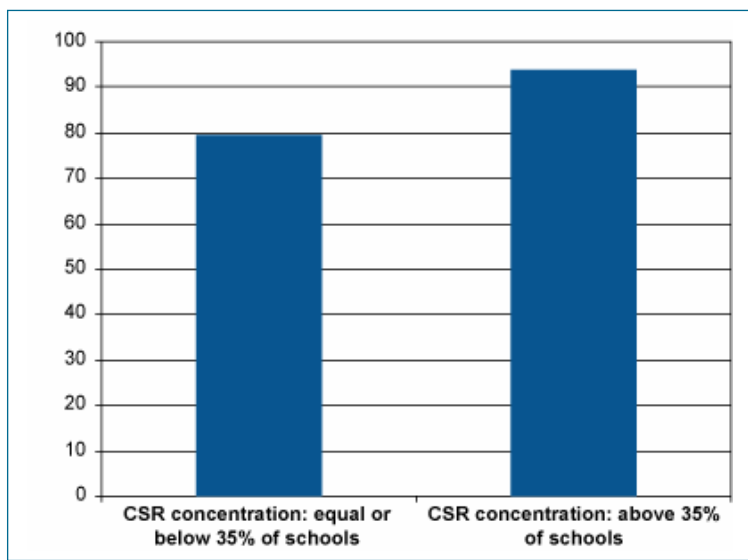
Overall, a few district characteristics—size and CSR concentration—were weakly related to the likelihood that schools will vote for the adoption of a CSR model. However, the most relevant conclusion is that voting, as part of the process through which schools adopt a CSR model, has become a nearly de facto component of the life cycle of CSR.

School Characteristics

Turning next to the school level, we sought to determine whether there were any relationships between school contextual variables and the likelihood that a school's model adoption process included a faculty vote. Again, we examined the relationship between the principal's report of voting and demographics. Interestingly, almost no school-level contextual variables appeared to be systematically related to voting for a CSR model.

The key findings of interest relate to school size. To investigate this, we used a simple logistic model in which the principal's report of whether or not the staff had engaged in a voting process was the dependent variable, and the school size in the unit of 100 students was used as the predictor without other controls. These analyses suggest that larger schools were somewhat more likely to vote: according to this model, an increase of 100 students in school size increased the probability of voting by 6%. However, survey data also indicate that large schools were less likely than small schools to reach a high percentage in favor of adoption. The percentage of votes that favor adoption had negative correlation with school size: The correlation coefficient was −.128 and significant at the 0.05 level.

One interpretation would suggest that there were challenges associated with communicating important model-related information within schools that have large faculties. Perhaps the process through which teachers were informed of model options was hindered within large schools, which resulted in lower levels of favorable votes during the decision-making process. Alternately, it was possible that it was simply harder to achieve a broad consensus within a large—and perhaps more diverse—faculty. However, the prevailing conclusion of these analyses is that voting for a model is widespread.

Does the Adoption Process Have Implications for Implementation?

Research on CSR suggests a probable association between the quality of the model adoption process and subsequent implementation. Having discussed the prevalence of the adoption process, we now explore the interaction between adoption and variables associated with implementation.

First, many models (Success for All [SFA], Core Knowledge, Direct Instruction, America's Choice) require that at least 80% of the school's faculty vote for the adoption of their model before implementation, as evidence of teachers' involvement in the decision-making process (Stringfield, Ross, & Smith, 1996). Indeed, all New American Schools (NAS) models required some threshold of teachers to vote for the model, although this threshold ranged from 60 to 80%. To what extent does a critical mass of teachers who support implementation actually signal true buy-in and result in improved implementation?

Because our survey data included a measure of the percentage of teachers who voted in favor of the model, we were able to gauge the relationship between a specific threshold of teachers voting in favor of the model and level of implementation. In general, we found that principals reported very high levels of teachers voting in favor of the model—across the CSR schools in the NLECSR sample, the average percentage of teachers who voted in favor of the model was 88%. Perhaps because of these generally high levels of support, we found no relationship between level of implementation and a critical threshold of teachers in favor of the model, whether we used an 80% or even a 90% threshold. Indeed, at the 80% threshold, we found a significant *negative* relationship between level of implementation and the percentage voting in favor of the model.

Table 4.2. Percentage of schools in which the proportion of teachers voting in favor of model adoption was above or below specific thresholds

	80% threshold		90% threshold	
	Percentage of schools below threshold	Percentage of schools above threshold	Percentage of schools below threshold	Percentage of schools above threshold
Accelerated Schools Project (n=22)	22.7%	77.3%	63.6%	36.4%
ATLAS Communities (n=6)	16.7%	83.3%	50.0%	50.0%
Co-nect (n=10)	30.0%	70.0%	60.0%	40.0%
ELOB (n=5)	20.0%	80.0%	80.0%	20.0%
MRSh (n=4)	50.0%	50.0%	75.0%	25.0%
SFA (n=89)	34.8%	65.2%	68.5%	31.5%
TOTAL (n=136)	31%	69%	67.4%	32.6%

There are some plausible reasons for which a critical threshold of 80% of teachers in favor of adoption was associated with lower levels of implementation. Most notably, some models that appeared to be easier to implement—that is, they had higher levels of implementation (see chapter 5)—also tended to receive lower levels of teachers who initially voted to adopt the model. SFA was the most notable of these, with only 65% of schools voting above the 80% threshold (see Table 4.2). Conversely, process-oriented models generally received higher levels of initial votes, but later appeared more difficult to implement. Overall, it appeared that there was little empirical support for a "super-majority" of faculty votes for the adoption of a model as an indicator of buy-in.

It is also possible that the generally high proportions of teachers who voted in favor of the model masked the generally positive impact of the voting process. As Stringfield, Millsap, and Herman noted in 1997, "regardless of the abstract strengths of a reform, the fact that a principal and faculty had considered diverse options and voted to follow a particular path increased the probability of successful implementation." Thus, it is possible that it is the act of voting that was important, rather than an arbitrary threshold. Perhaps if teachers had a voice, and a vote, this was enough to secure higher levels of implementation.

Again, we found that there was no relationship between voting and implementation. That is, when comparing CSR schools that engaged in a voting process to those that did not vote, the effect of having involved faculty in a democratic voting process did not appear to yield any implementation benefits.

However, we are cautious about discounting potentially positive effects of the model adoption process. It is possible that there are still some benefits of a high-quality adoption process that were simply not detected by our measures. Indeed, NLECSR survey instruments did not include measures of the *legitimacy* of the adoption process. Moreover, analyses did detect a significant relationship (at the 0.05 and 0.01 levels) between voting and the teacher survey scale related to clear and shared goals (see Table 4.3). If faculty members come together during the adoption phase, this is likely to foster (or perpetuate) a climate in which teachers are united behind a common purpose. And, because voting is indicative of an inclination to include teachers in a decision-making process, we would expect schools that voted to also be those with positive indicators of shared decision making. Indeed, the principal survey scale related to "school-level involvement in decision making" was significantly related to whether a school had voted for its CSR model (at the 0.05 level).

Table 4.3. Regression coefficients for survey scales and voting for CSR models

	Coefficient	Standard error
School-level involvement in decision making	0.166*	0.073
Clear and shared goals	0.149**	0.027
Usefulness of developer-provided information	0.227**	0.040

*p value significant at 0.05 level. **p-value significant at 0.01 level.

Finally, we found a significant relationship in one survey scale that was more closely related to implementation: teachers' perceptions of the usefulness of information provided to them by model developers. This scale was derived from several items on the teacher survey that probe the efficacy of specific developer supports, such as a needs assessment, curricular materials, onsite assistance, or conferences. In cases in which they voted for a model, teachers had more positive perceptions of developer activities. Perhaps teacher involvement in the voting process predisposed them to a favorable impression of the model, or active engagement during the adoption process resulted in the selection of a model that best met the needs of a school. In either event, positive perceptions of the usefulness of developer-provided information bode auspiciously for implementation.

To understand the model adoption process, such analyses are only a first step. Although these analyses reveal broad contextual relationships, the survey questions only addressed a single segment of the adoption process: whether a school voted for the CSR model. Survey data did not enable us to explore the degree to which teachers were informed of the model choices, who was involved in the adoption processes, and whether the processes were perceived to be legitimate and open. The qualitative data yielded more insight into the range of activities in which schools engaged as they select a model.

When Schools Adopt CSR Models, What Is the Quality of That Process?

To better understand the range of activities in which schools engaged when selecting a model, we carefully reviewed all interview transcripts from teachers, principals, and model coordinators and coded these data through the NLECSR Analytic Rubric. As depicted in Figure 4.5, there was indeed a large range within the "ratings" schools received for the aggregate quality of their adoption processes.

While calibrating all scores, it became apparent that schools fell into specific clusters, based on the activities that characterized their adoption processes. That is, specific practices seemed prevalent in schools that fell within a limited range of adoption ratings, and these practices lent themselves to natural clusters. The descriptions of these processes are as follows:

♦ **Closed Adoption** (ratings of 0.0–0.40). Schools with the lowest ratings were those in which the adoption process could be characterized as "closed." In such schools, both the information-gathering and decision phases involved few staff; the former most often included a single individual or restricted set of staff, and the latter was either a forgone conclusion or teachers had no say whatsoever. Often (but not always), there is a lingering sense of negativity with regard to the adoption process in such schools.

♦ **Directed Adoption** (rating of 0.41–0.60). In these schools, there was one organization or individual who strongly encouraged the school to adopt a model, most often the principal. Quite often a vote did occur, but it was conducted primarily because most models require a formal vote process and often lacked legitimacy.

Figure 4.5. Rubric ratings for the model adoption process
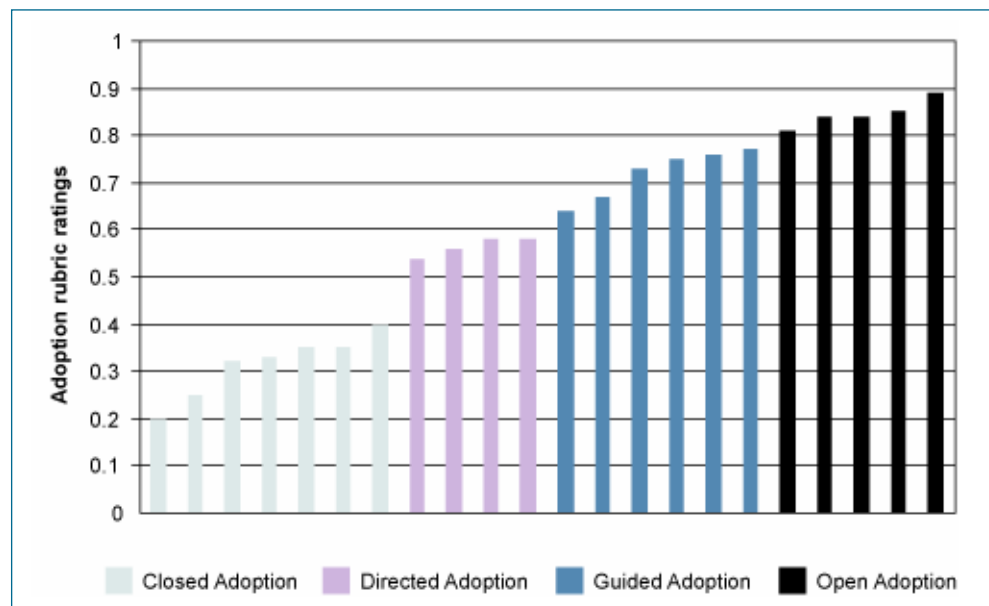
- ◆ **Guided Adoption** (ratings of 0.61–0.80). In schools with guided adoption, the information-gathering phase was often quite open and inclusive, and the decision phase legitimate, but at least one key aspect was lacking. For example, a school may fall short with regard to the formats through which it provided information on the model choices. Instead of visiting schools and inviting model developers to visit, stakeholders may have only reviewed videos and text materials. In such schools, teachers had a generally positive recollection of the adoption process.

- ◆ **Open Adoption** (ratings of 0.81 or higher). In these schools, there was clearly a proactive engagement on the part of many staff members with regard to model adoption. The information-gathering phase was extensive, often characterized by teachers visiting schools with models, making presentations to their colleagues, actively questioning model developers, and debating a range of model choices. The decision process was legitimate, and teachers were allowed the opportunity for dissent. In short, all aspects of the process were "open," including participation, model consideration, and feedback.

The following profiles further illustrate the ways in which these patterns took form at the school level.

Profile of Open Adoption (Rating of 0.81 or Higher)

Northway Elementary School[23] selected a CSR model in the context of a district initiative that encouraged schools with at-risk students to adopt models. Despite this potentially negative impetus for reform, staff at Northway has no negative perceptions of the adoption process. With regard to the information-gathering phase, faculty at Northway asserted that they had sufficient opportunities to learn about their selected model (SFA) in comparison to other models. School staff learned about the model by forming a designated committee that worked collaboratively with the school management team to

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[23] All school names are pseudonyms.

consider different models and present information about the models to the staff. They researched at least seven different models that included Comer, the Accelerated Schools Project, America's Choice, and SFA. In addition, the district provided presentations on all the models. Finally, teachers reported receiving documentation on different models, reviewing these model data, and discussing them with colleagues.

Formally, school staff at Northway selected SFA through a vote. School-level staff voted on all models, and SFA received more than 90% of the staff vote. Teachers perceived that they had authentic input in the decision process. Teachers in the focus group stated, "We had input at looking at the other models. . . . We went through them together, the administrators and teachers." Years later, the staff was able to articulate their reasons for having adopted SFA. Teachers believed specific aspects of the model fit the needs of the students because it focused on reading for 90 minutes, required at least 20 minutes of student reading per day, and built connections between home and school. The reform facilitator concurred, noting that "Success for All really meshed with the teachers' beliefs."

In summary, despite actions taken by the district to narrow model selection choices for Northway, the school-level decision making for the model was inclusive of school staff. School committees and the district worked to generate information about various models for school staff. School staff had a positive tone toward the model at adoption time particularly because of perceptions of fit with existing teacher beliefs as well as children's needs.

Profile of Closed Adoption (Rating of 0.0 to 0.40)

At Baxter School, the adoption process was strikingly different. Most teachers at Baxter were excluded from the information-gathering phase of the process, which was restricted to a closed group of teachers on the restructuring team. The few teachers on the restructuring team were able to research different models, as one explains: "Our principal gave us a list of programs—at the time I was on the restructuring team— and we were allowed to go to demonstrations of other reform programs. . . . I was impressed with America's Choice; I thought it would have worked for us here." But teachers who were not on the restructuring team were less engaged, as illustrated by the following quotes:

> "I was at the school when the model was adopted, but I was not involved in the selection process. . . . I had no input."

> "I think I had heard a little about American Choice [sic] . . . or was it Success for All?"

> "We came back one school year [and] we were told this is what we're going to do."

Most teachers were ambiguous about whether they were given the opportunity to vote for the model; the only interviewed teacher who recalled voting was the member of the restructuring team. However, she acknowledged that several teachers had lingering resentment with regard to the model, and these teachers later asserted, "I didn't vote!" Other commentary from teachers suggests that they perceived that CSR was simply a mandatory process in which they had no say. Even if we accept some accounts that there was a vote, clearly it lacked validity to many of the faculty at Baxter.

In sum, the adoption process lacked transparency—few teachers received any information about models under consideration, and fewer still perceived they had a voice in the decision. Not surprisingly, teachers at Baxter retain some bitterness about the model.

Case Study Data

While the survey data reveal several promising associations between voting and indicators of school climate, case study data enables us to more carefully probe the dynamics of the adoption process. To further explore the relationship between the adoption process and constructs related to implementation, we turn next to the qualitative data. The NLECSR Analytic Rubric captured several constructs closely related to the implementation of the model. Most notable among these is the comprehensiveness dimension. This is conceptualized as the degree to which stakeholders understand that the CSR model is intended to be comprehensive or multidimensional—that is, encompassing multiple aspects of school activities, including instruction, governance, professional development, and parent involvement, among others. When respondents were aware of several model components—and articulated this in the context of an interview—they received higher ratings for comprehensiveness. Clearly, knowledge and awareness of model components are important precursors to full implementation of the model.

Figure 4.6 depicts the relationship between the quality of the adoption process and stakeholder understanding of model comprehensiveness, both as measured by the NLECSR Analytic Rubric. Results from these analyses may be used to cautiously explore emergent trends, with the primary objective of identifying relationships that merit further qualitative study. The addition of a simple regression line revealed a very weak relationship between the adoption process and a comprehensive understanding of the model. That is, as the quality of the adoption process increased, so did stakeholder awareness of key components of the model—but only slightly.

Figure 4.6. Scatterplot of rubric ratings for adoption and comprehensiveness
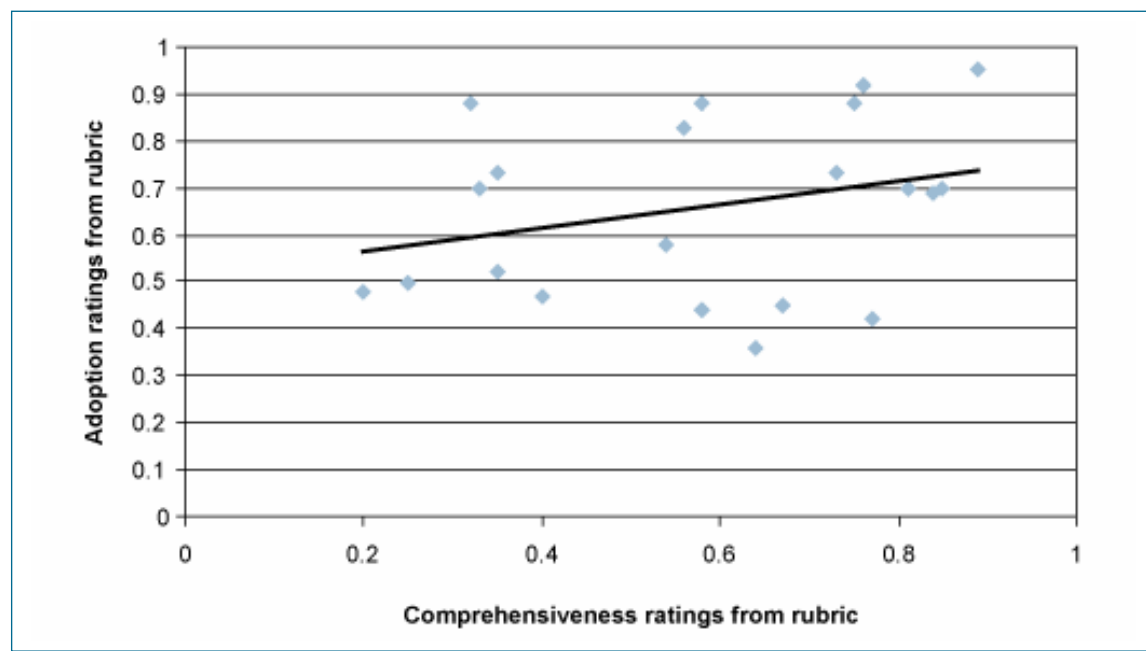
As our conceptual model suggests, if teachers learn about a reform approach during the adoption process, they are in a stronger position to build on this knowledge during the implementation process. However (and perhaps more interestingly), there are examples from our case study data in which a school received a relatively high rating for the quality of the adoption process, but received a low comprehensiveness rating—

or the converse, schools in which stakeholders exhibited a high level of understanding of the model, despite an adoption process that was lacking. To highlight these variations, Figure 4.7 depicts the relationship between adoption and comprehensiveness ratings in a slightly different manner.

In Figure 4.7, the relationships among the ratings emerge more strikingly. Several schools had predictably close associations between adoption and comprehensiveness, with the ratings for both dimensions relatively low or relatively high. Interestingly, many of the schools with the lowest ratings for adoption had much higher ratings for comprehensiveness, and several schools with "open" adoption processes nonetheless exhibited lower levels of understanding of the model. To better understand the way in which school-level dynamics generate these disparate interactions, we explored these two sets of contrasting scores: schools with low adoption/high comprehensiveness ratings and schools with high adoption/low comprehensiveness ratings.

Contrast A: Low Adoption/High Comprehensiveness

Five schools had notable disparities in their adoption and comprehensiveness ratings—their comprehensiveness ratings were above 0.70, but the adoption rating was at least 20 points lower:

♦ Centerville Elementary (adoption: 0.32; comprehensiveness 0.88)

♦ Shoreland Elementary (adoption: 0.33; comprehensiveness: 0.70)

♦ Iberville Elementary (adoption: 0.35; comprehensiveness: 0.73)

♦ Chamberland Elementary (adoption: 0.58; comprehensiveness: 0.88)

♦ Roseton Elementary (adoption: 0.56; comprehensiveness: 0.83)

Figure 4.7. Comparison of rubric ratings for adoption and comprehensiveness
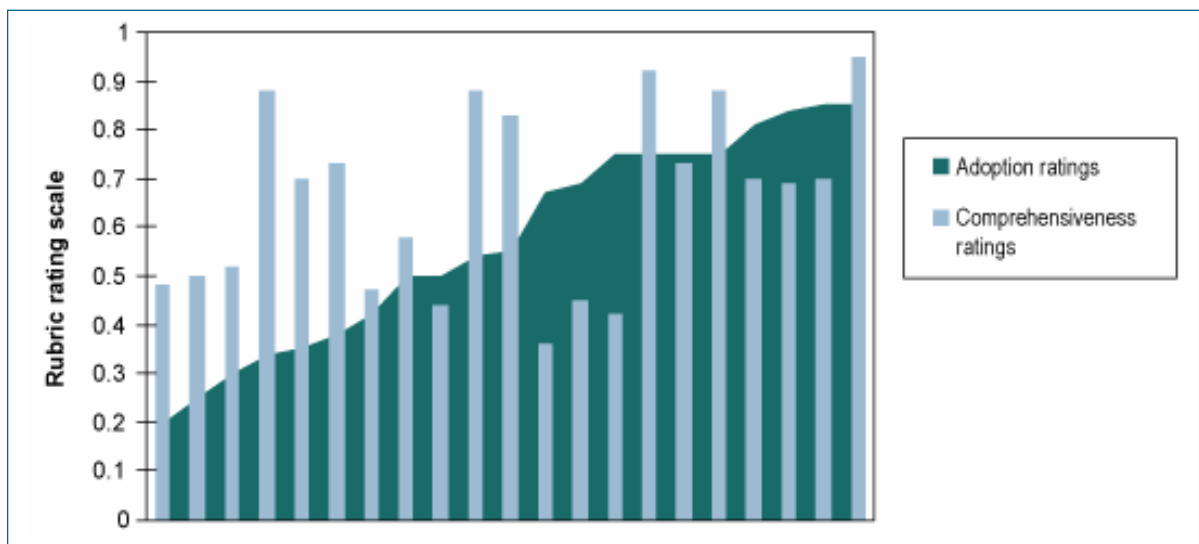
Looking across these schools, some common characteristics emerged, which inform understanding of the implementation process. Each school had either a strong, visionary principal, a relatively cohesive professional community, or both. In both Chamberland and Roseton Elementary Schools, teachers

described their principals in very positive terms, both emphasizing the principals' determination. In Chamberland, for example, the teachers explained,

> Recently our principal was identified as a model principal. . . . I think all of the things that we've been able to accomplish have been with the help or the leadership of [the principal], because she has vision and she does not sit back and wait for things to happen. If she hears about anything that's coming down the pike, then she will dispatch people to learn as much as they can about it and bring it back here so that we are always on the cutting edge.

Likewise, Roseton teachers explained, "There are certain things our principal is very passionate about. She's always looking out for new ideas and the ones she thinks are going to come to fruition she pushes." In these cases, the principals drove the adoption process because they thought the models would benefit the schools and successfully converted teachers to this vision, resulting in high comprehensiveness scores.

In two of the other schools, the professional community facilitated faculty awareness and understanding of the models. Teachers at Iberville—one of the schools with a notably low adoption rating—described a cohesive community: "Lesson plans are presented not as an individual but as a group, and that keeps in mind that we are working together for the benefit of all the children and it's not just one single pioneer, but all of us are pioneers together in this journey of education." It appears that this sense of working together translated into a high level of model awareness.

At Centerville Elementary, the qualitative data resulted in an overall adoption rating of 0.34 (one of the lowest) but stakeholders nonetheless exhibited a high level of understanding of the model (0.88). This was a school in which the principal clearly drove the adoption process, explaining, "Co-nect was really right in the line of what I was doing anyway. . . . I wrote the grant." Teachers were less engaged in the principal's grant-writing process, recalling vaguely, "The model had already been selected when it was brought to the faculty. . . . So, that's how we found out about it." However, this school eventually became a model for others that were considering adopting Co-nect, hosting visitors from other schools:

> They were visiting our school to see what we were doing and how we were doing it. And everybody was on target. It was just perfect. And the fact that we were able to connect the model with our daily activities made it all that more worthwhile. Because a lot of kids that probably would have been overlooked in some activities, they saw everybody else participating so they did too. . . . [The students] were really, really involved. You could really see the ownership of the children.

In this school, however, it did not appear that the principal drove the success of the model, but rather the success was in the way teachers worked together. As one explained, "What I love about being here, the teachers work together. . . . If we get lemons, we make lemonade!" Apparently, they did just that with regard to the CSR adoption process. This example suggests that an informative and inclusive adoption process is not a necessary precursor to effective implementation.

In the final school in this category, Shoreland Elementary, the explanatory factor was less clear: The school was one that faced many challenges, including a transient community and a mildly acrimonious relationship between the principal and (at least some of) the faculty. The most positive element in the school appeared to be a shared sense of caring for the students. So here, too, it seemed probable that the professional community overcame the potential negative side effects of a closed adoption process.

Contrast B: High Adoption/Low Comprehensiveness

There were three schools with adoption ratings higher than 0.64 and comprehensiveness ratings that were at least 22 points lower. Overall, there were fewer schools with extreme differences between high adoption process and low comprehensiveness ratings. The three schools in this category were:

- ♦ Traceland Elementary (adoption: 0.64; comprehensiveness: 0.36)

- ♦ Canton Elementary (adoption: 0.67; comprehensiveness: 0.45)

- ♦ Greenway Elementary (adoption: 0.77; comprehensiveness: 0.42)

Traceland Elementary offered an interesting example of this second set of contrasting scores. This school experienced a relatively inclusive adoption process, resulting in a rating of 0.64. However, teachers exhibited a relatively low level of understanding of the model, and the comprehensiveness score was only 0.36. In this case, a strong principal served to ensure that the teachers were engaged in the adoption process and understood the model from the start. As teachers recalled,

> We had a very strong principal who was very interested in improving test scores. She was very interested in the research that was going on. She was a great networker and so she learned of [the model] and, you know, the philosophy behind it. . . . So she was kind of ahead of her time. She was always three steps ahead of what was going on, so that's how she got us into it. . . . The staff really agreed to do the work.

Another teacher said, "It had to be by faculty vote, so if we did not agree to it, they would not accept it. . . . The principal explained it quite well, and we discussed it quite a bit and then we agreed to it. . . . We saw a film; people came from the state and spoke to us." However, after a few years of implementation, this principal left the school, to be replaced by an interim principal for 1 year. As a result, the components of the model faded quickly—and with some regret expressed by teachers who knew the former dynamic principal. Once this principal left, the faculty could not sustain the same levels of comprehensiveness, particularly as new staff joined their ranks. As this case illustrates, the benefits generated by an effective adoption process and strong leader can dissipate quickly. However, had the principal not left, it is likely that this school would have retained a strong relationship between the quality of the adoption process and faculty awareness of the model.

The data for Greenway Elementary offered several clues about barriers to implementation and the school's low rating for comprehensiveness. Teachers expressed little enthusiasm for collaborative practice (said one, "We haven't met that often collaboratively, but actually I prefer it that way"), contempt for district policies, and nothing more than lukewarm assessments of the principal. What was surprising, in fact, was that the adoption process was relatively inclusive and informative: teachers reported visiting other schools, studying models, deciding which model best suited their school, and voting for the model of their choice. However, this case suggests that even an adoption process designed to foster teacher buy-in may not be adequate to overcome school-level challenges to reform.

To summarize, the qualitative data suggested that for some schools, there was a predictable relationship between the quality of the adoption process and the degree to which stakeholders understood the core components of the model—a key precursor to implementation. However, many schools in the case study sample deviated from this trend. For some schools a "closed" adoption process did not preclude eventual teacher buy-in; either a persuasive principal or a cohesive professional community could overcome this

hypothetical barrier. In contrast, an "open" adoption process did not appear adequate to overcome organizational challenges present within a school.

Conclusion

In the past, CSR researchers suggested that the quality of the adoption process was a critical precursor to gaining teacher buy-in, which in turn was an important indicator of the ultimate success of the model. As such, the "birth" of a CSR model had potentially important implications for success later in life. However, our data suggest a more nuanced view: adoption may be an important but not necessarily critical element in the implementation process. In some cases, strong school-level supports were of greater consequence than the quality of the adoption process. Overall, three themes emerged from the NLECSR analyses of the model adoption process.

The first theme was that of the *institutionalization of voting*. Of the schools in the NLECSR sample that adopted a model, a clear majority did so through a voting process. As such, NLECSR data indicated that voting for a CSR model had become a fairly embedded practice. While there were a few schools that did not engage in a voting process, there seemed to be little systematic variation by school or district demographics. Only school size, district size, and CSR concentration explained this limited variation, but the effects of these variables were not particularly pronounced.

The second theme was that of the *limited relationship between voting and the level of implementation*. Contrary to the assumptions of scholars and model developers alike, there appeared to be no benefits associated with a "super majority" of teachers voting in favor of the adoption of a given model. However, it is possible that schools that engaged in an adoption process that was informative, inclusive, and legitimate would have higher levels of implementation. Unfortunately, NLECSR survey data do not adequately address these constructs.

The third theme was that of *variation in quality*. While some schools engaged in an adoption process that included many teachers, informed teachers of their options, and gave them an unfettered voice in decision making, other schools adopted models with little or no faculty consultation. Case study data indicated that the quality of the adoption process was loosely related to teachers' perceptions of model comprehensiveness, a precursor to implementation. Survey data revealed significant relationships between voting and constructs associated with implementation, such as shared goals and perceptions of the quality of CSR developer supports. Despite these modest associations, the qualitative data were also interspersed with cases in which there were marked contrasts between the quality of the adoption process and teachers' understanding of the model.

Indeed, these contrasting cases suggest that the model selection process may be far less important than other school-level supports, most notably school leadership. In general terms, an "open" adoption process was more favorable for implementation, but an "open" adoption process itself appeared inadequate to overcome a challenging school culture. In addition, the benefits of an open adoption process may dissipate quickly if a charismatic school leader departs. Although NLECSR data did not enable us to conduct a full analysis of the relationship between the adoption process and leadership, they did suggest that the quality of the adoption process was a by-product of the quality of the school leadership. In cases in which the adoption process was closed, but comprehensiveness ratings were high, teachers frequently credited their principal with vision, determination, and a deep commitment to the school. In the (fewer) cases in which the adoption process was open, but comprehensiveness ratings were low, such a principal had recently departed. While past research has focused on the benefits of engaging teachers in the selection of the model, future research should explore the extent to which such benefits are primarily associated with the quality of school leadership.

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Chapter 5: Implementing Change

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Introduction

The preceding chapter explored the initiation of reform in schools. This chapter continues the story of the CSR life cycle by examining what happens after formal adoption. That is, do schools that adopt models actually change practices in ways that are consistent with those advocated by model developers? Do they in fact implement the models?

Measuring and accounting for implementation remains a key challenge for any program evaluation. The methods employed to measure implementation vary perhaps as much as the focus and content of CSR models themselves. Using both quantitative and qualitative analyses, we explore how CSR model implementation varies, identify what factors predict CSR model implementation, and illustrate how well school stakeholders understand CSR model implementation. The *qualitative analysis* of implementation captures the process and comprehensiveness of implementation from the points of view of principals, teachers, and staff in a subsample of study schools. Our approach for the *quantitative analysis* is quite different. We measure implementation as *fidelity to the model design,* or the extent to which schools conduct the specific school- and classroom-level practices recommended by a CSR model's developer (Aladjem, 2003).

The analyses included in this chapter focus on the following research questions guiding the NLECSR study:

♦ **RQ 2:** How are model characteristics related to the success of model implementation and improvement in teaching and learning in specific types of settings and with specific types of students (RQ 2.1)? Specifically, to what extent does implementation of components of CSR vary overall and by type of setting (RQ 2.2)?

♦ **RQ 3:** What supporting conditions and strategies are necessary to effectively implement and sustain CSR models in schools and school districts? Specifically, to what extent do states' and districts' CSR policies effectively support and maintain CSR (RQ 3.1) and to what extent does technical assistance provided by CSR model developers support CSR (RQ 3.2)?

To address these general questions, we use both quantitative data and analyses and qualitative case study data to answer several more specific questions regarding CSR implementation.

Research Question 1: How Does the Implementation of CSR Practices Vary Across Schools and Over Time?

To explore the variation in schools' level of implementation, we first examine whether schools that are implementing CSR models engage in activities required by their CSR model to a greater extent than comparison schools that are not implementing the model.[24] We then investigate how implementation varies across CSR models to determine whether particular models tend to be implemented with greater fidelity than others. Next, since implementation is by nature an ongoing process, we study how schools' fidelity to their CSR model design changes during the 3-year study period. We also assess the degree to which implementation varies according to schools' phase of CSR implementation; that is, we check whether high levels of implementation are associated with schools that recently adopted a CSR model, schools that have been implementing a model for a few years, or schools that have been implementing a model for several years.

Research Question 2: What Factors Influence School Stakeholders' Implementation of CSR Practices?

Our second research question probes the district-, school-, and teacher-level conditions that affect how CSR practices are implemented. First, for each dimension of implementation, we examine the amount of variance at the district, school, and teacher levels. Then, we test for variables that significantly predict schools' level of implementation in 2002 and 2004. We also examine which factors are related to changes in schools' implementation levels. Finally, we examine the contextual factors that school stakeholders perceive to influence their understanding of CSR models and ultimately the decisions that they make regarding implementation.

Research Question 3: To What Extent Are CSR Models Perceived to Be Comprehensive in Nature, and Are They Implemented Comprehensively?

Our last research question for this chapter considers whether, in keeping with the theory of CSR, schools are implementing model practices in a comprehensive manner. That is, we assess the degree to which schools are implementing multiple dimensions of CSR model practices, including areas ranging from instruction to school governance to professional development, rather than a select few. We also investigate the ways in which teachers and school leaders understand CSR models to be implemented comprehensively and on a schoolwide basis. We also search for differences between schools characterized by high or low comprehensiveness.

Organization of the Chapter

Next follows a discussion of the conceptual framework guiding this chapter, including a brief review of the literature on factors that may explain implementation. We then describe the methods and analytical approach used. The discussion of findings focuses on each of the research questions posed above.

Theoretical/Conceptual Framework

Characterizing Comprehensive School Reform Implementation

Schools implementing CSR models are supposed to apply research-based approaches to every aspect of the schooling process. Building off prior federal statute, the 2001 *No Child Left Behind Act* defines CSR

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[24] As explained below, the measure of implementation that we have developed allows us to measure "implementation" in our comparison schools; that is, it allows us to measure how "model-like" the practices are of the comparison schools.

models as reform programs possessing 11 key components, including a comprehensive design, research-based strategies, and high-quality professional development. These components are important because they are used as indicators to measure the programmatic adequacy of reform models, and they are required of every CSR model paid for through federal funds.

Well-implemented CSR programs are assumed to profoundly change practices and activities taking place in schools, and the changes facilitated by CSR programs are intended to improve student outcomes. However, a recent meta-analysis of research studies on CSR's effectiveness in boosting student achievement carried out by Borman and colleagues (2003) reveals a shortage of evidence that would permit developers to make even modest claims about the performance of their models. Moreover, it is clear that there is wide variation in models' effectiveness in cases where evidence can be mustered. Both Borman's work and the Herman et al. (1999) review suggest that among the great many CSR programs in operation, very few qualify as research-based. The reported lack of effectiveness and inconsistent findings could be due to varying level of CSR program implementation—any CSR effort is only as good as its implementation.

Indeed, implementing a CSR program is hardly a straightforward process and the level of implementation tends to vary both within and across schools (Desimone, 2000). Moreover, many schools do not implement CSR programs comprehensively: only some of the core elements of the CSR program might be actively implemented at a particular time (Desimone, 2002; Berends, Kirby, Naftel & McKelvey, 2001). For example, in RAND's study of New American Schools (NAS), they found that only about half of schools began to implement the core components after 2 years of program adoption (Glennan, 1998). Bloom and his colleagues (2001) found that many Accelerated Schools began to implement components of curriculum and instruction in the 3rd or 4th year of implementation. Accordingly, it is likely that some schools will be more successful in their reform efforts than others.

Factors Influencing CSR Implementation

The success of implementing a CSR program depends on multiple factors (Desimone, 2002). CSR programs are implemented in a complex setting (schools) by a set of relevant school-level actors—administrators, teachers, CSR coordinators—who have varying capabilities to initiate and support a profound reform. The likelihood of successful reform—that is, full implementation of a CSR program and associated improvement in student achievement—involves actions of multiple actors on multiple levels: students, teachers, parents, principals, and district and state administrators. These factors include the context in which the reform occurs (school characteristics and district support for CSR), the roles of teachers and principals in the process of implementing a CSR model, and the developer supports for implementation.

The Context in Which CSR Takes Place

District support

As discussed in chapter 3 of this report, districts can engage in a range of activities with regard to CSR. Some districts institute policies mandating the use of CSR or even particular models in their schools. Others may simply encourage schools to adopt a CSR model and provide various forms of technical assistance to support implementation. Still others may take a hands-off approach to CSR, leaving schools to locate their own sources of implementation support.

RAND's evaluations of schools implementing New American School designs determined that certain district contexts and activities were associated with higher levels of implementation of CSR models. Schools in districts that offered higher levels of support tended to exhibit higher levels of implementation.

Effective district-level support included direct activities such as providing resources and political backing for CSR as well as more indirect activities like promoting CSR-friendly school and district environments. Such environments featured a lack of crisis situations, a culture of cooperation and trust, school-level decision-making authority, and CSR-compatible accountability and assessment systems (Bodily, 1998; Berends, 2001).

Datnow and Stringfield (2000) recommend additional district-level supports for CSR, such as establishing a distinct set of common goals that are connected to key long-term improvement strategies; creating a coordinated effort for disseminating information about reform; facilitating a thoughtful, critical evaluation of what needs to change in a school and why; aligning policy systems to support reform; and being willing to change to adapt to the needs of the reform.

School environment

Not only does the level of CSR implementation appear to vary by district characteristics, but also by those of the school itself. First, studies indicate that schools in high-income areas with smaller proportions of minority students have been more successful in implementing school reform programs (Berends, Bodily, & Kirby, 2002; Yonezawa & Datnow, 1999). Moreover, student mobility has been shown to have a negative impact on implementation (Bloom et al., 2001).

Next, the district and state policy environment in which CSR schools are situated may affect they way in which models are implemented. Most notably, a school-level environment with conflicting or competing reforms or policies does not foster implementation with fidelity to the model, whereas a coordinated reform effort between different levels of actors (teachers, schools, school district, state) positively affects implementation of school reform (Hatch, 1998). Policies and reform programs with aligned goals and strategies facilitate implementation and avoid conflicts inherent in multiple demands. Schools that implement CSR programs often have high concentrations of students living in poverty, rendering the schools Title I-eligible, and hence eligible for many other state and federal funding streams. If states and districts do not carefully manage these funding streams, they may generate fragmented and conflicting environments (Berends et al., 2002, p. 135). According to Berends and colleagues (2002, p. 12), "[Teachers'] ability to cope with these demands and their commitment to changes are crucial to coherent and sustained implementation."

The Actors Who Implement CSR

Several sets of individuals contribute to the success—or failure—of a given CSR model; among these are principals, teachers, and model developers themselves. Below, we briefly review the literature on the roles of each of these agents in the context of CSR implementation.

Principals

Principals who have deep understanding of the CSR program and who can adapt their leadership style to fit the needs of the reform can help the faculty to reach higher levels of CSR program implementation. In addition, principals who can secure additional resources, establish clear expectations, and are involved in everyday instructional decisions have positive impact on implementation of school reform (Berends, 2000; Berends et al., 2002; Berends, Kirby, Naftel, & McKelvey, 2001). The importance of active and continuous principal leadership is demonstrated by the destructive effects of principal turnover: many reform programs do not survive the exit of a supportive principal.

Teachers

Although principal leadership has been linked to successful implementation of CSR programs, teachers bear most of the responsibility of successful implementation. Many CSR programs demand a high level

of professionalism, highlighting the importance of informal teacher networks as the sources of knowledge and support necessary for successful implementation of a CSR program (Elmore, 1996; Purkey & Smith, 1983; Bodilly, 1996; Stringfield & Datnow, 1998; Cooper et al., 1998). These networks, or teacher communities, make collaboration and creation of clear goals and expectation regarding program implementation possible. Social networks and trust take time to build, and implementation of a demanding reform without a well-functioning teacher community may not be feasible. As a result, school reform efforts are likely to be negatively affected by teacher turnover. Further, teachers who have supportive professional networks and common planning time to tackle problems related to school reform programs are likely to implement programs with higher fidelity (Cooper, Slavin, & Madden, 1998; Stringfield & Datnow, 1998).

CSR model providers

Finally, CSR model developers, in addition to teachers and principals, are crucial actors in the successful implementation of a CSR program. Although developers support school stakeholders in a number of ways, such as providing information and monitoring implementation, the primary support activity is providing professional development. Ongoing professional development provided by CSR program developers has been identified as perhaps the most important aspect of support by building the necessary knowledge base and ensuring opportunities for teachers to collaborate (Desimone, 2000; Berends, 2000) as well as for the CSR provider to address potential teacher resistance to the reform (Haynes, 1988). Other researchers have also found links between successful implementation and professional development. For example, Berends and colleagues (2002, p. 15) found that levels of implementation were higher in schools that received design team support through whole-school training, the involvement of facilitators, and extensive professional development, compared to schools that did not receive such support. Professional development opportunities provided by the developer enable teachers to renew their knowledge and understanding of a model's reform strategies.

However, developers may also make mistakes in their efforts to stimulate change in low-performing schools. For example, Bodilly (1996) found that some developers had difficulty quickly securing staff needed to fully develop the model and to assist schools in implementation. In addition, developers sometimes moved too quickly, encouraging the implementation of a design before it was adequately developed, resulting in confusion during the first years (Bodilly 1996).

Methods/Analytical Approach

Data

Quantitative Data Sources

The quantitative data used in this chapter consisted of responses to NLECSR's longitudinal teacher, principal, and district surveys.[25] Because our implementation measures are composed of teacher-reported information, we focus on data from Year 1 and Year 3 of our study (i.e., during the 2001–02 and 2003–04 school years) when the teacher surveys were administered. For our control variables, we drew on data from all three surveys to measure factors concerning school and district contexts for CSR; we also incorporated some school information found in the Common Core of Data (CCD). To create our CSR

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[25] See chapter 2 for more detailed information about our survey data collection.

implementation measures, we constructed 12 indices of teacher survey questions[26] that probed various areas of school and classroom practice. We also asked CSR model developers to answer these survey questions, specifying the practices that would constitute full implementation of their model. The model developers' responses were used to evaluate how closely teachers' reported practices compared with full implementation of a particular CSR model.

While our sample for the quantitative analyses featured both CSR and comparison schools, the inclusion of individual schools hinged upon our ability to compute their implementation scores. One major factor determining whether we could calculate these scores was the availability of model developer data. In all, seven model developers responded to our surveys; thus, the scope of our analysis was limited to schools associated with one of those seven CSR models. Additionally, several model developers omitted responses to individual survey items within our implementation indices, preventing us from measuring those indices for their particular CSR model. Our sample size also decreased as a result of our comparison school matching process. Since our analyses required linking comparison schools to compatible CSR schools within the same district, an imbalance in the response rates between districts' CSR and comparison schools reduced the number of schools we could include. Also, because a small number of school districts have ardently adopted CSR models, we lost most comparison schools in these districts and consequently lost most of the CSR schools as well.

Table 5.1 shows how many CSR and comparison schools were used for each of the seven CSR models. It is important to note that some models—Success for All/Roots & Wings (SFA/RW), Co-nect, and Accelerated Schools Project—are represented more highly than others in our sample. However, these models tended to be particularly popular during our study period, and the unevenness of our sample to some degree reflects the variation in CSR models' nationwide prevalence.

Table 5.1. Number of CSR and comparison schools, by model and year

CSR Model	Year 1		Year 3	
	CSR Schools	Comparison Schools	CSR Schools	Comparison Schools
Accelerated Schools Project	29	31	25	33
ATLAS Communities	12	18	13	18
Co-nect	23	36	17	31
Success for All	87	84	77	70
Turning Points	6	8	5	7
Modern Red Schoolhouse	8	13	7	12
Expeditionary Learning/Outward Bound	5	3	5	3
Total	**170**	**193**	**149**	**174**

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[26] We originally included several principal survey items in our implementation indices as well, but changes to our principal survey instruments made these items somewhat inconsistent between Year 1 and Year 3. Because teacher survey items covered most of the same information and teachers were likely more direct observers of school practices, we chose to base our implementation measures solely on teacher reports.

Qualitative Data Sources

Our investigation of CSR implementation also relied on qualitative data, described in chapter 2, that we collected through semi-structured individual interviews and focus groups with administrators and teachers in 24 case study schools. During the 2002–03 and 2003–04 school years, the research team conducted 57 interviews of administrators (principals, assistant principals, and facilitators), 192 interviews of teachers, and 30 focus groups with teachers. In-depth interviewing with multiple school stakeholders provided an opportunity to discuss school processes and perceptions of CSR implementation (Spradley, 1979). Individual interviews of administrators lasted approximately 60 minutes, while teacher interviews and focus groups ranged from 15 to 30 minutes. During the interviews, the participants were asked questions about their implementation of CSR model components (i.e., school culture, organization and governance, curriculum and instruction, assessment, and professional development). Participants were also asked to discuss, among other topics, challenges and supports that they had received while they implemented the models.

Analytical Models/Methods

For our first research question, we conducted a descriptive analysis of our school implementation scores using two-way analysis of variance (ANOVA). The ANOVA models allowed us to test for significant differences in mean implementation levels between CSR and comparison schools among the various CSR model designs and across school districts. Furthermore, to determine whether implementation levels change over time, we tested for significant mean differences according to schools' phase of implementation as well as between schools' 2002 and 2004 implementation scores.

While the ANOVA analyses indicated general trends in schools' implementation levels, they did not control for other factors that could affect implementation. Thus, to investigate these general trends further and to locate implementation predictors in response to our second research question, we constructed multilevel regression models (three-level hierarchical linear models). These models—which included levels for teachers, schools, and districts—enabled us to determine which specific factors were significantly related to implementation, including school characteristics, developer assistance, or school districts' policies in support of CSR.

These multilevel models can be summarized as:

$$Y_{ij} = \beta_{0j} + \sum B * X + \varepsilon_{ijk} + \gamma_{jk} + \delta_k$$

Where:

Y_{ij} is the implementation index;

the units of analyses are i teachers that are nested within j schools and k districts;

a data matrix X contains values for the predictors;

while B is a set of coefficients to be estimated; and

errors—district-level error δ_k, school-level error γ_{jk}, and teacher-level error ε_{ijk} —are normally distributed, with a mean of zero.

Due to the relatively small number of school districts, district-level support measures were added one by one. Moreover, we used two-level models (teacher and school) to predict change in implementation given the small amount of variance at the district level.

The qualitative component of our second research question involved a thematic analysis across the CSR schools in our focus study to uncover conditions that may influence school stakeholder understanding and implementation of their CSR model. These analyses used interview and focus group data, employed cross-case data displays (Miles & Huberman, 1994), and were used to identify contextual factors that may explain school-level stakeholders' variations in perceptions. The first step in these analyses was to code interview transcript data using the qualitative analysis software NUD*IST. Our predetermined coding structure matched constructs present in the NLECSR surveys, but we retained the flexibility to add new codes as they emerged in the open-ended data. We then compared the coded data on a school-level basis, drawing out themes that were present across multiple sites.

Responding to our last research question, which investigates how comprehensively schools implement CSR, we again incorporate both qualitative and quantitative analyses. For our quantitative examination of comprehensiveness, we determined the number of CSR components (e.g., curriculum, inclusion, parent/community involvement) each school implemented at an above average level in 2002 and in 2004. Based on this number, we rated the school as having low (less than 4 components highly implemented), moderate (4–8 components highly implemented), or high (more than 8 components highly implemented) comprehensiveness in their implementation. We then conducted a chi-square analysis to search for differences in comprehensiveness over time and between CSR and comparison schools. To determine whether schools implemented instructional components of CSR comprehensively, we repeated this process using only 5 instruction-related implementation measures: inclusion, curriculum, student grouping, pedagogy, and time scheduling.

Qualitative analyses for our third research question used the NLECSR Analytic Rubric (described more fully in chapter 4), focusing on its ratings for teachers' awareness of the "comprehensiveness" and "schoolwide use" of their CSR model. The construct of comprehensiveness is conceptualized as the degree to which school-level stakeholders understood the model to be multidimensional—that is, not restricted to a single component such as instruction. Schoolwide use encompasses the degree to which stakeholders perceived the model to be implemented across classrooms, grades, and subjects. To accomplish this analysis, we delineated five distinct levels identified by a 0–4 rating scale and defined each carefully for both constructs (see Tables 5.1 and 5.2). To complete a rubric for each school, a researcher read all principal, facilitator, and teacher interview and focus group transcripts, identified text that informed the constructs related to understanding of CSR, and rated each respondent's comments for both constructs.

We coded all of the data and created an appropriate construct score for each school. These scores were used to identify schools that had either high or low levels of CSR model understanding, and generated descriptive categories of schools in a continuum of CSR understanding. Later in this chapter, we profile two schools that represent each extreme of the continuum of CSR understanding—that is, exceptionally clear and detailed understanding of the components of the CSR model and an apparent lack of understanding of any of the core components of the model. The case studies profiles also illustrate the challenges and supporting conditions identified by stakeholders, and to which they attribute the success (or demise) of CSR implementation in their schools.

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Measures

Fidelity of Implementation

The literature on CSR is replete with different strategies for measuring implementation. Typically, researchers have worked with model providers to determine a set of implementation benchmarks and indicators and then set about measuring them using school questionnaires (Bifulco, Duncombe, & Yinger, 2005; Cook et al., 1999; Supovitz & May, 2003), stakeholder interviews and classroom observations (Bodilly, Keltner, Purnell, Reichardt, & Schuyler, 1998; Bloom, Rock, Ham, Melton, & O'Brien, 2001; Datnow, Borman, Stringfield, Rachuba, & Castellano, 2003), or a combination of data collection methods (Smith et al., 1997; Smith et al., 1998). Other studies have relied on more indirect measures such as the number of years a school has been implementing a CSR model (Berends et al., 2002) or schools' self-reported degree of implementation (Kirby, Berends, Naftel, & Sloan, 2001).

While assessing schools' level of implementation tends to be relatively straightforward when evaluating a single program or intervention, measuring implementation across multiple models becomes a complex task. Berends, Kirby, Naftel, & McKelvey (2001) employed a clever approach in their study of NAS designs. They developed two survey-based measures of implementation: (1) a core implementation index that examined elements common to all NAS models such as parent/community involvement and standards-based assessments and (2) an intervention-specific set of indices that was geared to each individual intervention.

To calculate the level of implementation for the diverse set of CSR models included in the NLECSR sample, we developed a somewhat different approach. We measure implementation as fidelity: the extent to which the CSR model of interest is delivered to the intended recipients in the intended way (Aladjem, 2003). This approach (summarized in appendix A) is based on the idea that to measure the fidelity of implementation, we should measure what schools are doing and compare that with what CSR model developers consider to be "full" implementation of their reform. The challenge of measuring implementation is finding the difference between the positive, empirical reality of school life and the normative vision of CSR model developers.

We operationalized this process by asking CSR model developers to fill out the same survey instruments as our principal and teacher respondents, as if they were a fully implementing school. Model developers' responses to questions regarding school and classroom practices became what we refer to as CSR model keys, the sets of survey responses that define full implementation for each particular CSR model. Comparing our principal and teacher respondents' answers against the key for their respective CSR model, we calculated the squared Euclidean distance between the ideal developer-specified implementation (as captured by the CSR model keys) and the actual implementation taking place in schools (as captured by the principals' and teachers' survey responses). To allow a more intuitive interpretation of the results, we then transformed this distance measure into a percentage of implementation (see appendix A for a full description of the methods used to calculate implementation indices). Thus, our fidelity of implementation measure can be understood to represent how fully a school is engaged in those practices that a school should be engaged in during full implementation of a specific CSR model.

While the process just described provided implementation scores for schools formally implementing CSR models, we also needed to generate "implementation" measures for our nonimplementing comparison

schools[27]—that is, we sought to assess whether schools that had adopted CSR models were indeed engaging in different practices than schools that had not officially adopted a CSR model. Since measuring comparison schools' implementation levels required comparing their practices against a specific CSR model key, we needed to determine which CSR model the comparison schools would be likely to implement if they were to choose to implement one. To assign comparison schools an appropriate CSR model, we decided to use a propensity score approach by which we calculated the propensity of being a CSR school for every school in our sample and then matched comparison schools with the CSR school in their district that had the most comparable propensity score (see appendix B for a full description of this method). As a result, we were able to compare levels of CSR model implementation between CSR schools and comparison schools with similar characteristics.

The implementation indices used in our descriptive analyses are school-level measures; that is, we aggregated the implementation scores calculated for each teacher within a school to create a school-level measure of implementation. In the two-level HLM model featuring only teacher and school levels, we use teacher-level implementation indices.

Our implementation indices include seven general categories and 12 specific implementation indices (see Table 5.2).[28] These indices align closely with the definition of "comprehensive design" included in the federal CSR grant program (20 USC 6516). The policy guidance for this program reads, "A comprehensive design for effective school functioning integrates instruction, assessment, classroom management, professional development, parental involvement, and school management. . . . It aligns the school's curriculum, technology, and professional development into a plan for schoolwide change" (U.S. Department of Education, 2002).

Table 5.3 provides basic descriptive statistics for each of the implementation measures. In both Year 1 and Year 3, the mean implementation levels for CSR and for comparison schools are strikingly similar across all indices. However, the mean levels of implementation do appear to vary considerably by the component indices. For example, the level of implementation is generally high on indices related to instruction, such as Curriculum, Time Scheduled for Instruction, Pedagogy, and Use of Assessments.

The size of the standard deviations also varies by index. Larger standard deviations tend to coincide with indices that are less highly implemented such as use of technology, inclusion, and parent–community involvement. The size of these standard deviations implies less consistency in implementation across schools.

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[27] Another valid method of testing whether CSR models change how schools operate would have been to compare the practices reported by CSR schools before and after they adopted their CSR model. However, since many schools adopted their CSR model before our surveys were administered, we lacked the data to perform such an analysis and thus relied upon comparison schools to provide this differential.

[28] Indices were weighted by how central and specific each dimension is to each CSR model (Forte Fast et al., 2001) Centrality and specificity ratings were determined by a review of published CSR model materials and information in 2000.

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Table 5.2. Implementation indices

Total Implementation: A measure that combines all implementation indices into one comprehensive measure of implementation.
Governance **Shared Decision Making:** The extent to which decision-making authority in a school is shared among faculty, staff, and administrators according to the CSR program developer's ideal of shared decision making.
Technology **Use of Technology in Classrooms:** The extent to which the ways teachers use technology in their classroom match the CSR program developer's ideal.
Parent–Community Involvement The extent to which a school's actions regarding parent–school communication and community involvement match the CSR program developer's ideal.
Professional Development **Emphasis of Professional Development (PD):** The extent to which the PD received by teachers matches the CSR program developer's ideal regarding the type (all grade-level teachers collectively vs. noncollectively) and emphasis of the PD. **Engagement in Informal PD:** The extent to which teachers' engagement in informal PD matches the CSR program developer's ideal.
Assessment **Influence of Assessments:** The extent to which different types of assessments influence students' grades, grouping decisions, adjusting curriculum, etc., according to the CSR program developer's ideal. **Use of Assessments:** The extent to which the teacher is using classroom assessments according to the CSR developer's ideal.
Organization of Teaching/Classrooms **Inclusion:** The extent to which non-native English speakers and students with disabilities are mainstreamed in general education classes according to the CSR program developer's ideal. **Student Grouping:** The extent to which students are taught in similar or mixed ability groups and how often these groups change according to the CSR program developer's ideal. **Time Scheduled for Teaching:** The extent to which the frequency and length of instructional time matches the CSR program developer's ideal.
Instruction **Curriculum:** The extent to which teachers teach mathematics or English topics according to the CSR program developer's ideal. **Pedagogy:** The extent to which teachers engage in different instructional activities according to the CSR program developer's ideal.

Table 5.3. Descriptive statistics for implementation indices

Index	Year 1 CSR Schools					Year 1 Comparison Schools					Year 3 CSR Schools					Year 3 Comparison Schools				
	Mean	SD	n	Min	Max	Mean	SD	n	Min	Max	Mean	SD	N	Min	Max	Mean	SD	n	Min	Max
Total implementation	0.62	0.04	163	0.46	0.724	0.62	0.05	182	0.42	0.71	0.63	0.04	143	0.53	0.71	0.62	0.05	166	0.44	0.71
Shared decision making	0.65	0.12	169	0.10	0.84	0.64	0.12	190	0.19	0.86	0.61	0.10	148	0.19	0.79	0.61	0.10	173	0.31	0.84
Inclusion	0.72	0.20	155	0.19	0.98	0.72	0.20	169	0.25	1.00	0.76	0.15	129	0.19	1.00	0.75	0.15	147	0.16	1.00
Parent–community involvement	0.56	0.10	155	0.30	0.78	0.57	0.10	169	0.21	0.80	0.63	0.10	136	0.37	0.87	0.63	0.09	154	0.43	0.86
Professional development: emphasis and type	0.72	0.09	169	0.47	0.90	0.73	0.09	190	0.41	0.87	0.73	0.10	148	0.36	0.88	0.72	0.10	173	0.40	0.89
Engagement in informal professional development	0.72	0.10	163	0.34	0.96	0.72	0.11	182	0.31	1.00	0.76	0.10	143	0.46	0.92	0.75	0.12	166	0.34	0.93
Use of technology in classrooms	0.53	0.14	161	0.00	0.88	0.54	0.14	176	0.17	0.87	0.55	0.13	141	0.24	0.95	0.54	0.15	161	0.21	0.83
Student grouping	0.86	0.09	169	0.52	1.00	0.87	0.08	190	0.61	1.00	0.90	0.07	148	0.65	1.00	0.88	0.11	173	0.00	1.00
Time scheduled for instruction	0.86	0.12	169	0.36	0.98	0.83	0.15	189	0.33	0.97	0.87	0.14	148	0.34	0.99	0.83	0.18	173	0.27	0.98
Influence of assessments	0.76	0.05	163	0.61	0.91	0.75	0.07	181	0.56	0.94	0.76	0.06	143	0.57	0.93	0.75	0.08	166	0.30	0.92
Use of assessments	0.87	0.04	169	0.73	0.95	0.87	0.05	190	0.72	0.98	0.86	0.05	148	0.65	1.00	0.86	0.06	173	0.67	0.96
Curriculum	0.89	0.09	158	0.61	0.99	0.87	0.10	177	0.58	0.99	0.89	0.10	136	0.57	0.99	0.89	0.10	165	0.54	1.00
Pedagogy	0.82	0.07	145	0.52	0.98	0.81	0.08	157	0.54	0.97	0.81	0.09	123	0.36	0.96	0.81	0.09	144	0.45	0.97

Control Variables

To determine factors that predict schools' fidelity of implementation, we added a range of control variables[29] into our statistical analyses. Generally speaking, these variables fell into four basic categories: factors related to school context, teacher characteristics, CSR model information, and district context.

- ◆ To control for school context, we included:

  - ■ Three variables related to schools' student population: student enrollment (*School size*), the percentage of students eligible for free or reduced-price lunch (*Percentage of students eligible for free or reduced-price lunch*), and the percentage of English language learners (*Percentage of ESL students*)

  - ■ A scale variable that featured survey items about change in district policy and leadership, change in school leadership, school safety, and the physical condition of the school (*Challenging Environment Index*)

  - ■ Two variables related to principal leadership: a dummy variable recognizing new principals with 1 year or less experience in their current school (*Principal recently joined school*) and a scale variable that captures teachers' attitudes about principals leadership skills (*Principal Leadership*)

  - ■ A dummy variable that identifies middle schools, i.e., schools with grades 6–8 (*School has middle grades*)

  - ■ A dummy variable indicating whether schools failed to make Adequate Yearly Progress (*Missed AYP*)

- ◆ To control for teacher background, we included:

  - ■ A dummy variable identifying new teachers with 1 year or less in their current school (*New teacher*)

  - ■ A dummy variable distinguishing between English and mathematics teachers (*English teacher*)

- ◆ To control for factors related to CSR treatments, we included:

  - ■ Two sets of CSR model-related variables: one that takes a value of 1 for specific CSR models (*Accelerated Schools Project, ATLAS Communities, Co-nect, ELOB/TP, MRSh, SFA/RW*) and one that assigns a particular CSR model design to respective CSR schools and matched comparison schools (*ASP Key, ATLAS Key, Co-nect Key, ELOB/TP Key, MRSh Key, SFA/RW Key*)

  - ■ Two variables indicating any changes in schools' CSR status: a dummy variable showing whether CSR schools dropped or switched CSR models during the study period (*Dropped/switched relationship with CSR model*) and a dummy variable showing whether comparison schools adopted a CSR model (*Adopted CSR model*)

  - ■ A scale variable that captures teacher's view about the usefulness of CSR model developer's assistance (*Usefulness of developer's support scale*)

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[29] Details on these variables are presented in appendix B.

- Two dummy variables to distinguish schools' phase of implementation: one for schools that have been implementing CSR for 3–5 years (*Middle implementation stage*) and one for schools that have been implementing CSR for more than 5 years of CSR model (*Late implementation stage*)

- A dummy variable indicating whether schools had a CSR model coordinator or coach (*CSR coach/coordinator*)

♦ To control for district context and CSR support, we included:

- Four scale variables measuring different types of CSR support provided by the district (*District assistance with CSR model selection, District professional development for CSR, District technical assistance for CSR, District community outreach*)

- A variable indicating the percentage of schools in the district that are implementing CSR models (*CSR concentration*)

Results

How Does the Implementation of CSR Practices Vary Across Schools And Over Time?

CSR Schools Do Not Systematically Have Higher Levels of Implementation Than Their Matched Comparisons

Given the theory underlying CSR that instituting a cohesive, developer-specified set of practices can improve school performance, one would expect to find schools affiliated with a CSR model engaging in practices prescribed by that model more often than comparable, unaffiliated schools. However, our analysis revealed surprisingly few significant differences between CSR and comparison schools' average implementation levels. As a whole, the comparison schools appeared to be implementing practices very similar to those of their matched CSR treatment schools (see Table 5.4).

Several factors might explain the striking similarity between CSR and comparison schools' reported activities. School districts may impose mandates or guidelines regarding school policies, such as those concerning curriculum, inclusion, professional development opportunities, and assessments. It is also possible that many practices advocated by model developers (such as the 90-minute reading block pioneered by SFA) have become mainstreamed, accepted as the best practices, and endorsed by districts to be implemented in schools. Comparison schools may choose to incorporate model-like behaviors they have observed in CSR schools or encountered through school networking activities. Moreover, staff who transfer from CSR-implementing schools to comparison schools may continue to use and even encourage others to use model-prescribed practices in their new environment.

Implementation Varies by CSR Model Design

Although few implementation differences seemed to exist between CSR schools and their comparisons, implementation did vary a great deal across the CSR "keys" representing developers' specified CSR model design. In other words, schools' implementation levels were clearly related to the particular "bundle" of activities that each CSR model provider endorsed—some models were generally implemented at high levels, while others were much lower. This finding implies that some CSR models advocate practices that are more difficult to implement, perhaps because they require a larger amount of

resources or because they deviate more significantly from mainstream practice.[30] Furthermore, CSR model designs might affect implementation levels by emphasizing particular dimensions such as instruction or school governance over others. Schools may also choose to customize a CSR model or to implement only select components, thereby lowering their fidelity to the developer's original design.

Table 5.4. Results from descriptive analysis

Implementation Index	Difference Between All CSR Schools and Matched Control Schools		Difference Among CSR Keys		Difference in Implementation Index Over Time	Variation in Level of Implementation by Phase of Implementation		Difference in Implementation Among School Districts	
	Year 1	Year 3	Year 1	Year 3		Year 1	Year 3	Year 1	Year 3
Total implementation			***	***	Increase ***	***		***	***
Governance									
Shared decision making			***	***	Decrease***			***	***
Technology			***		Increase**			***	***
Parent–community involvement	(-)*		***	***	Increase**			***	***
Professional development (PD)									
Emphasis of PD				**				***	***
Informal PD			***	***	Increase***	***		***	***
Assessment									
Influence of assessments			***	***				***	***
Use of assessments		(+)**	***	***			***	***	***
Organization of teaching/classrooms									
Inclusion			***	***	Increase***			***	***
Student grouping			***	***	Increase***		***		
Time scheduled for teaching			***	***	Decrease*	***	***	***	***
Instruction									
Curriculum			***	***				***	***
Pedagogy	(+)**		***	***	Increase***			***	***

Note. * = $p<0.1$; ** = $p<0.05$; *** = $p<0.01$; (+)(-)=CSR schools have higher or lower level of implementation respectively.

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[30] Particularly innovative approaches may be more difficult to implement because they involve more substantial and deliberate changes in school behavior, whereas practices that have been mainstreamed may already be occurring in schools.

Figures 5.1 and 5.2 further illustrate our findings that there are remarkably few differences in implementation between CSR and comparison schools but numerous differences across CSR model designs. We can see both gross differences between models as well as differences regarding activities that may not be central to particular models. Differences also emerged among dimensions that may be controlled by school districts (such as policies regarding inclusion of special populations, parent–community involvement, and time scheduled for teaching).

Figure 5.1. Implementation of CSR key, Year 1 of the study (2002)
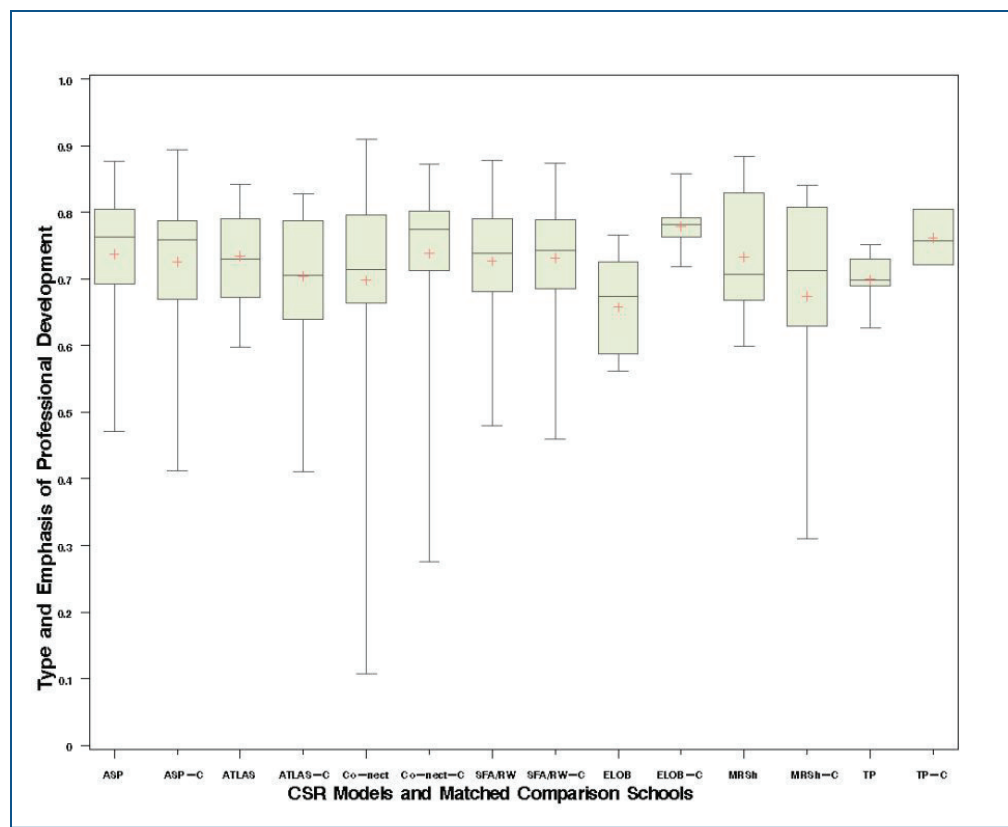
Implementation Levels Change Over Time

A comparison of 2002 and 2004 implementation scores revealed that schools' total level of implementation increased significantly over time. Additionally, the majority of our 12 individual implementation indices exhibited some form of change. Six indices increased between 2002 and 2004 (informal professional development, pedagogy, inclusion, student grouping, technology, and parent–community involvement), two decreased (shared decision-making and time scheduling), and five remained roughly the same (influence of assessments, use of assessments, curriculum, and emphasis of professional development).

Figure 5.2. Implementation of CSR key, Year 1 of the study (2002)
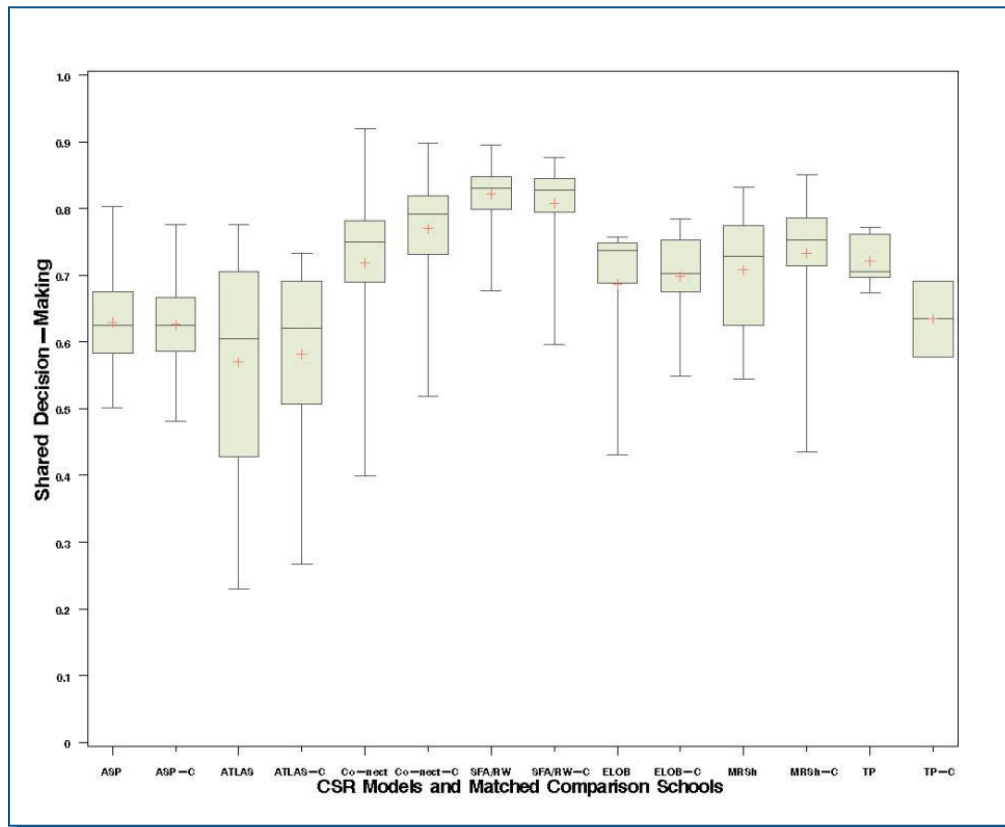
Because implementation levels in both CSR and comparison schools were generally higher in 2004, this increase in total implementation likely implies that CSR practices are becoming more mainstreamed. However, the changes in implementation we found between 2002 and 2004 may also point to CSR's nature as an evolving process. Strategies involving considerable changes to existing practice may take time for schools to fully realize, producing eventual increases in implementation fidelity. Moreover, some CSR practices, perhaps those that are more resource intensive, may be difficult for schools to sustain and thus lead to decreases in CSR model fidelity. Fluctuations in implementation may also stem from contextual factors including school leadership or teacher turnover. Changes in district policy that require schools to alter their behavior may impact their fidelity of implementation. Conversely, rigid district policies that govern school behavior may prevent schools' implementation levels from changing, which may explain why potentially district-controlled areas like curriculum, assessment, and professional development remained fairly static.

Variation in implementation over time might also suggest that schools are concentrating on particular components at different stages of the CSR process. For example, schools might initially focus on implementing a model's instructional strategies and then, once those practices are in place, incorporate other dimensions like parent and community involvement. Plus, schools may re-evaluate the appropriateness of their CSR activities over the course of their implementation and make adjustments accordingly. To test whether schools' implementation levels varied at particular points during the reform process, we searched for differences according to schools' "phase" or duration of implementation; that is, whether a school had been implementing a model for less than 3 years, 3–5 years, or more than 5 years.

Indeed, we found that in 2002, schools implementing for 5 or more years had higher total implementation levels than schools implementing for 3–5 years, which in turn had higher levels of implementation than schools implementing for less than 3 years. In 2004, the relationship was a bit less clear. The group of schools implementing for 5 or more years continued to have the highest level of implementation and were significantly higher than the schools in the less than 3 years category; however, there was no significant difference between the 5 or more years schools and the 3–5 years schools or between the 3–5 years schools and the less than 3 years schools.

Implementation Appears to Vary Significantly Across Districts

In both 2002 and 2004, implementation levels varied significantly by school district for all indices except student grouping. As suggested earlier, districts may have policies that heavily dictate school practices in certain areas such as curriculum, shared decision-making, or professional development. Given our method of calculating implementation fidelity, schools' implementation levels for such areas would relate to how closely CSR model-prescribed activities coincided with district-prescribed activities. Additionally, given the significant relationships we found between implementation levels and CSR model designs, it is possible that this variation across districts can be attributed to the prevalence of particular CSR models within each district. The nature of our sample is such that for many of our districts, one or two of our seven CSR models clearly predominate. Thus, the apparent jurisdictional differences we have found may actually be picking up differences between CSR model keys. We explore districts' potential impact on implementation more in-depth in the following section in which we seek to identify specific variables that affect implementation.

What Factors Influence Schools' Implementation of CSR Practices?

Our previous analyses suggest that implementation varies by model design, by component, and over time. Next, we sought to determine whether implementation varies most by teacher, school, or district, and what predicts such variation. To examine the question of the level of variance in implementation, we estimated unconditional, three-level (teacher, school, district) regression models. Table 5.5 shows the percentage of variation for each implementation index in each of these levels.

Teachers Account for Most of the Variation in Implementation

As Table 5.5 illustrates, most of the variation in implementation levels happens at the teacher level. That is, even within a single school, teachers implement CSR models at different levels and in different ways. However, implementation scores regarding shared decision making, inclusion, and time scheduling each have significant proportions of variance at either the school or district levels. This seems reasonable as these are typically decisions made at the school or district levels, not by individual teachers. For example, the ways in which students with disabilities are included in regular classrooms is not solely a teacher's decision, but generally involves administrators and other support staff. As such, we would not expect most variance at the teacher level. Somewhat surprisingly, pedagogy also has a high proportion of variance at the school and district levels, indicating that teachers' classroom instructional practices are fairly uniform within schools and districts. Coherent and aligned professional development activities or curricular strategies may explain this finding, but our data did not allow us to test this hypothesis. Also surprisingly, curriculum and assessment—often determined by the district—showed most variance at the teacher level. This suggests that despite district or school curriculum and assessment requirements, teachers are not necessarily following district or school policies.

Table 5.5. Location of variance in implementation

Outcome	Teacher		School		School District	
	2002	2004	2002	2004	2002	2004
Total implementation	66.4%***	69.7%***	20.3%***	23.1%***	13.3%***	7.2%**
Governance						
Shared decision making	67.5%***	80.1%***	23.6%***	13.2%***	8.9%***	6.7%***
Technology	83.9%***	85.3%***	10.2%***	10.7%***	5.8%***	4.0%**
Parent–community involvement	78.6%***	83.4%***	18.7%***	15.4%***	2.7%*	1.2%
Professional development						
Emphasis of PD	91.8%***	88.7%***	6.5%***	9.8%***	1.7%**	1.5%**
Engagement in informal PD	81.4%***	78.3%***	15.6%***	15.8%***	3.0%**	5.9%**
Assessment						
Influence of Assessments	88.1%***	90.9%**	7.6%***	7.7%***	4.3%**	1.4%*
Use of Assessments	89.5%***	88.8%***	7.5%**	8.8%***	3.0%**	2.4%**
Organization of teaching/classrooms						
Inclusion	30.9%***	59.6%***	47.6%***	26.3%***	21.5%***	14.1%**
Student grouping	95.5%***	91.3%***	4.0%***	8.0%***	0.5%	0.7%
Time scheduled for teaching	43.6%***	30.7%***	43.0%***	55.8%***	13.4%***	13.5%***
Instruction						
Curriculum	82.7%***	81.3%***	9.1%***	11.3%***	8.2%**	7.4%**
Pedagogy	44.2%***	38.7%***	30.7%***	34.5***	25.1%***	26.8%***

Note. * = p<0.1; ** = p<0.05; *** = p<0.01

Next, we turn to variables that might predict this variation in implementation (see Tables 5.6.1 and 5.6.2).

CSR Model Designs Influence Implementation.

Confirming the results of our descriptive analysis, our regression models indicated that large differences in implementation exist across CSR models. These results were consistent over time (from 2002 to 2004). This variation can likely be attributed to differences in the model developers' recommended practices since Accelerated Schools Project, ATLAS Communities, and Co-nect all differ significantly in design from SFA/RW. For example, with regard to pedagogy, each of the first three models emphasize less scripted, more complex forms of instruction, typically found in higher grade levels, while SFA promotes more easily implemented (due to their highly scripted nature) instructional practices. On the other hand, SFA is rather demanding with regard to parental involvement.

Teachers and principals in our case study schools also saw the design of their CSR model as an important factor in explaining the level of implementation. Specifically, they described constructs that we refer to as *programmatic fit* and *perceived model effectiveness*.

Table 5.6.1. Predicted levels of implementation by dimension in 2002

Parameter	Total Implementation	Shared Decision Making	Parent–Community Involvement	Use of Assessments	Influence of Assessments	Type and Emphasis of PD	Informal PD
INTERCEPT	+***	+***	+***	+***	+***	+***	+***
Accelerated Schools Project key	-***	-***	+***		-***		-***
Co-nect key	-***	-***	+*	+***			-***
ELOB/TP key				+***		+*	
MRSh key		-***		+***	+***		-**
ATLAS Communities key	-***	-***	+***	+***	+***		
SFA				+***			
Accelerated Schools Project	+**			+**			
Co-nect							
ELOB/TP		-**	+*	+**		-***	
MRSh				+**			
ATLAS Communities							
School size							
Free/reduced lunch							
Proportion ESL				-**	-*		
Coach/coordinator			-***			-*	+*
New principal							
Developer information	+***	+***	+***	+***	+*	+***	+***
Teacher community	+***	+***	+***	+**		+***	+***
Principal leadership	+***	+***	+***	+***	+***	+***	+***
School has middle grades	-**	+**	-***		-**	+**	
Adequate yearly progress		+**	-**				
3–5 years of implementation				-**			
More than 5 years implementation				-*			
New teacher	-***			-**	-**	-***	-*
English teacher		-***			+***	+***	-**
Switched/dropped CSR model					-**		
Adopted CSR model							
CSR concentration				NA			

Note. * = p<0.1; ** = p<0.05; *** = p<0.01; (+)(-)=CSR schools have higher or lower level of implementation respectively.

Table 5.6.2. Predicted level of implementation by dimension in 2002 (continued)

Parameter	Time Scheduled for Teaching	Inclusion	Student Grouping	Curriculum	Pedagogy	Use of Technology in Classrooms
INTERCEPT	+***	+***	+***	+***	+***	+***
Accelerated Schools Project key	+***	-***	-**	-***	-***	-***
Co-nect key	-***	-***	-***		-***	-**
ELOB/TP key	-***	-***	-***			-***
MRSh key		-***			-**	-**
ATLAS Communities key	-***				-***	-**
SFA			-**			
Accelerated Schools Project		+***			+***	+**
Co-nect	+**					+**
ELOB/TP						
MRSh						
ATLAS Communities						
School size	-**		+***			
Free/reduced lunch	-*					
Proportion ESL		-**				
Coach/coordinator			+**			
New principal			-*			
Developer information			+*			+***
Teacher community				+**		
Principal leadership	+***			+*	+**	+***
School has middle grades	-***		-**	-***		-*
Adequate yearly progress			-**			
3–5 years of implementation				+**		
More than 5 years implementation			+*	+*		
New teacher		+***			-*	-***
English teacher				+***	+***	+***
Switched/dropped CSR model						
Adopted CSR model		-*	-*			
CSR concentration						

Note. * = p<0.1; ** = p<0.05; *** = p<0.01; (+)(-)=CSR schools have higher or lower level of implementation respectively.

Table 5.7.1. Predicted levels of implementation by dimension in 2004

Parameter	Total Implementation	Shared Decision Making	Parent–Community Involvement	Use of Assessments	Influence of Assessments	Type and Emphasis of PD	Informal PD
INTERCEPT	+***	+***	+***	+***	+***	+***	+***
Accelerated Schools Project key	-***	-***	+***	-***	-***		-***
Co-nect key	-***	-***		+***	+**		-***
ELOB/TP key		+**		+***	-***		
MRSh key							
ATLAS Communities key	-***	-***	+***	+***		-*	
SFA							
Accelerated							
Co-nect	+**						
ELOB/TP							
MRSh				+****			
ATLAS Communities							
School size		+*		-***			
Free/reduced lunch			-**				
Proportion ESL			+**				
Coach/coordinator							
New principal							
Developer information	+***	+*	+***	+***	+**	+***	+***
Teacher community	+***		+**	+***		+**	+***
Principal leadership	+***	+***	+**	+***	+**	+***	+***
School has middle grades			-***	+***			
Adequate yearly progress							

Parameter	Total Implementation	Shared Decision Making	Parent–Community Involvement	Use of Assessments	Influence of Assessments	Type and Emphasis of PD	Informal PD
3–5 years of implementation							
More than 5 years implementation	-*	-*	-*				
New teacher	-***					-***	-***
English teacher	+*			+**	+***	+***	+***
Switched/dropped CSR model				+***		-*	
Adopted CSR model						-*	
CSR concentration	+*					+*	

Note. * = p<0.1; ** = p<0.05; *** = p<0.01; (+)(-)=CSR schools have higher or lower level of implementation respectively.

Table 5.7.2. Predicted levels of implementation by dimension in 2004 (continued)

Parameter	Time Scheduled for Teaching	Inclusion	Student Grouping	Curriculum	Pedagogy	Use of Technology in Classrooms
INTERCEPT	+***	+***	+***	+***	+***	+***
Accelerated Schools Project key	+***	-***	-***	-**	-***	
Co-nect key	-***	-**	-***	+*	-***	
ELOB/TP key	-***	-***			-***	
MRSh key			-*		-***	
ATLAS Communities key		-***			-***	
SFA						
Accelerated Schools Project						
Co-nect	+*		+*			
ELOB/TP		-*				
MRSh						
ATLAS Communities						

Parameter	Time Scheduled for Teaching	Inclusion	Student Grouping	Curriculum	Pedagogy	Use of Technology in Classrooms
School size	-**			-***		
Free/reduced lunch						
Proportion ESL		-***				
Coach/coordinator						
New principal					-*	
Developer information	+*	-**				+**
Teacher community				+***	+**	+*
Principal leadership			+**	-***	-***	+***
School has middle grades	-**			-*		
Adequate yearly progress		+**				
3–5 years of implementation						
More than 5 years implementation						
New teacher						-**
English teacher			-***	+***	+***	+**
Switched/dropped CSR model				-**		
Adopted CSR model			-*			
CSR concentration						

Note. * = p<0.1; ** = p<0.05; *** = p<0.01; (+)(-)=CSR schools have higher or lower level of implementation respectively.

Table 5.8.1. Differences in the level of implementation by dimension between 2002 and 2004

Parameter	Total Implementation	Shared Decision Making	Parent–Community Involvement	Use of Assessments	Influence of Assessments	Type and Emphasis of PD	Informal PD
INTERCEPT	+**	-**	+**		+**	+**	+***
Accelerated Schools Project key				-*	-**		-***
Co-nect key		+*					
ELOB/TP key		+***				-**	
MRSh key		+*			-***		
ATLAS Communities key	+***	+***					
SFA			+*	-*			
Accelerated Schools Project	-**				-*		
Co-nect			+*				
ELOB/TP		-*					
MRSh							-**
ATLAS Communities							
Prior implementation—middle	-***		-**			-***	-**
Prior implementation—high	-***		-*		-**	-***	-***
Average school size							
Average free/reduced lunch							
Average proportion ESL				+**			
Coach/coordinator							
New principal					-*		
School has middle grades				+**			
Adequate yearly progress							
3–5 years of implementation						-*	
More than 5 years implementation							
Average teacher community		-*					

Parameter	Total Implementation	Shared Decision Making	Parent–Community Involvement	Use of Assessments	Influence of Assessments	Type and Emphasis of PD	Informal PD
Change in teacher community			+**				
Average principal leadership				-*	+*	+***	
Change in principal leadership	+***	+***		+*		+***	+***
Average developer information							
Change in developer information	+***		+***			+***	
New teacher							
English teacher		+***					
Switched/dropped CSR model				+*			
Adopted CSR model		-**					

Table 5.8.2. Differences in the level of implementation by dimension between 2002 and 2004 (continued)

Parameter	Time Scheduled for Teaching	Inclusion	Student Grouping	Curriculum	Pedagogy	Use of Technology in Classrooms
INTERCEPT			+***		+*	+*
Accelerated Schools Project key		+***	-**	+**		
Co-nect key	-***		-**			
ELOB/TP key		+***				
MRSh key					+**	
ATLAS Communities key		+***	-*			
SFA						
Accelerated Schools Project		-**			-**	
Co-nect	-**		+***			
ELOB/TP						

Parameter	Time Scheduled for Teaching	Inclusion	Student Grouping	Curriculum	Pedagogy	Use of Technology in Classrooms
MRSh						
ATLAS Communities					-*	
Prior implementation—middle						-*
Prior implementation—high			-*		-*	-**
Average school size		+*	-**			
Average free/reduced lunch			-**	-**		
Average proportion ESL						
Coach/coordinator						
New principal						-**
School has middle grades						
Adequate yearly progress						
3–5 years of implementation						-*
More than 5 years implementation						
Average teacher community	+*				+**	
Change in teacher community						
Average principal leadership					-**	+**
Change in principal leadership	+*	+**				
Average developer information						
Change in developer information						
New teacher				-*		
English teacher		-***		-*+		
Switched/dropped CSR model					+*	
Adopted CSR model						
CSR concentration						

Programmatic fit

Programmatic fit refers to the degree to which school and CSR model goals, programs, and philosophies of education are aligned. Teachers and principals emphasized the importance of this fit for implementation. "We thought we had good programs here," said one principal. "We didn't need to change our whole program." This principal noted that the CSR model fit the instructional style of the teachers by emphasizing project-based learning.

Programmatic fit can also include how well a CSR model aligns with other school initiatives such as district-mandated programs and state assessment requirements. School stakeholders often perceived conflicts between district-mandated programs and implementation of their CSR models. Teachers in one focus group explained, "The demands that are administered to us from the board of education in terms of our curriculum and how it should be laid out—those demands far exceed the demands for the [model] this year. How can we incorporate [the model] and also incorporate what is mandated by [the district]?" Teachers in another school had an answer. "The district says, 'No, I'm sorry you can't do that [use model-related curricula]. We have our own scope and sequence, and we have our own themes.'"

The pressures teachers reported relating to state assessments follow the complaints commonly expressed about such tests and their impact on model implementation. "We have so much pressure on us to get these scores up that sometimes you get away from the model." "When you have to deviate from your instructional program to bring in things that they need to know for this or that test, that takes 2 or 3 weeks out of the program . . . it's just interruptive."

Perceived model effectiveness

Given this pressure to raise performance on state assessments, it is not surprising that teachers and principals cited CSR models' perceived impact on student achievement as an influence on their implementation. Where stakeholders perceived value and efficacy in their model, they reported stronger implementation. (Note that these perceptions do not necessarily match the empirical data reported in chapter 8 of this report.) In addition to student achievement outcomes, teachers and principals placed a high value on what they perceived to be a positive impact of their model on teacher professional community and instruction. Teachers stated that they felt supported by their colleagues during model implementation and that working and communicating together about the model, student work, and instructional practices enabled them to develop collaborative relationships and improve implementation. Teachers similarly reported that seeing positive changes in their own instructional practices as a result of using their CSR model strengthened implementation.

The Support of Key Actors Matters for Implementation

The results of our regression models reinforce teachers' perceptions that collaboration among colleagues facilitated implementation. Our measure of teachers' professional community was consistently and positively related to the level of implementation across multiple implementation indices, as were our measures of principals' instructional leadership and CSR model provider technical assistance. Our analysis predicting the change in schools' implementation levels suggests that principal leadership may be of particular importance. Of all the contextual variables considered, only one was significantly and consistently associated with the increases in implementation: a positive change in a principal's instructional leadership.

Together, these results illustrate the importance of key agents (principals, teachers, and CSR model providers) in the implementation process over other contextual factors such as schools' size, poverty level, and limited English speaking population. Such findings imply that CSR models can be successfully

implemented in different environments if the relevant actors are sufficiently engaged in the CSR process. Interview data from our case study schools produced similar findings. School stakeholders underscored the roles of these actors in terms of principal leadership, new teacher induction activities, and CSR developer assistance, all of which they perceived to influence their schools' implementation of CSR.

Principal leadership

Teachers and principals reported that the principal played an active role in ensuring that CSR was implemented faithfully. Two activities were found to be integral to the implementation process: making organizational changes to prepare schools for implementation and monitoring implementation.

Preparation of schools included things like reorganizing the school day to accommodate the needs of particular models—for example, the 90 minute reading period of SFA—as well as ensuring that faculty have common planning time. Common planning time was often seen as "very helpful for new teachers coming in because they have that opportunity to share and grow." Principals also were critical in encouraging and enabling teachers to participate in schoolwide decision making. Said one teacher, "Everyone is given their wings when they walk in the door and [are] allowed to fly. We vote on things, we talk about things, we make our decisions." This type of shared decision making was often done through leadership teams, committees, and study groups. Another teacher commented, "We all make decisions together. . . . Even though there is a leadership team, those of us in mathematics and language arts, those that teach those particular subjects, we all get together, and we talk about what we need and what we'd like to have [happen]."

Monitoring implementation was the other key form of principal leadership. It generally took the form of classroom visits and review of lesson plans. Classroom visits were the primary way of monitoring implementation. Some principals followed a systematic schedule, others visited every classroom, others used a less predictable and ad hoc approach of "dropping in" from time to time. One principal noted, "It doesn't take you 50 minutes to observe a classroom to see if teaching is going on [sic]." This principal described stopping in classrooms throughout the day to observe instruction. Reviewing lesson plans allowed some principals to monitor instructional activities and the extent to which they reflected the CSR model. One facilitator commented, "[The principal] wants to know how [the teachers] tie the model into their lesson plans throughout the week." A teacher explained, "We submit our lesson plans so our administration can see what we're teaching."

New teacher induction activities

School stakeholders stressed the importance of new teacher induction as critical to CSR implementation. New teacher induction activities were designed to encourage buy-in and to ensure that new teachers learned about the model. Typical of many teachers' attitudes was that of the veteran teacher who reported, "Someone who has been here since the start of the process sees it differently than someone [who just] came in September." Teachers and principals consistently thought that CSR models required extensive learning for new teachers, partly because models were new to new faculty and partly because of the difficulty of implementing some aspects of some models. As one principal reported, "It takes a good deal of time to really learn this . . . program, get entrenched in it, maneuver it, and make it exciting. First, you have to teach the new teachers how to teach the program before you can get into the deeper things with them."

CSR model provider technical assistance

School stakeholders highlighted the types of model provider support activities they received at their school as integral to the implementation process. On the basis of their descriptions, two general types of activities emerged: ongoing support and on-site technical assistance.

School stakeholders repeatedly emphasized the value and importance of ongoing support from CSR model providers. This support included workshops, materials (such as videos and books), and national conferences that focused on model components and strategies for instruction. One principal gushed, "We've had numerous in-services, and they've been wonderful and we've gained a lot of insight into various facets of the curriculum." While generally praised, principals also expressed frustration with specific developers. Another principal noted, "I think they can do more. I think that [for] the amount of money that we are paying them, we are not getting the services that we should have. I think there should be more technical assistance at the school, at least monthly."

This principal was not alone in the call for on-site technical assistance—indeed, many stakeholders believed that on-site assistance was critical to implementation. Common modes of on-site technical assistance include classroom observations and feedback and working with teachers individually or during grade level or study group meetings. Teachers valued the opportunities for direct answers to questions and support in addressing problems. Frustration, however, was also expressed about the lack of on-site support and the need for more frequent contact.

Principals' and teachers' engagement with model providers and their collaboration with each other suggest that it is the cooperation among these three key groups that promotes faithful implementation. This coordination may hold particular significance for CSR given the wide breadth that distinguishes it from more isolated reform strategies. The concept of CSR calls for an array of actors to institute concerted changes to numerous areas of school operations. In our last set of analyses, we explore the degree to which schools reflect this notion of comprehensiveness.

To What Extent Are CSR Models Perceived to Be Comprehensive in Nature, and Are They Implemented Comprehensively?

CSR rests upon the belief that uncoordinated changes to various aspects of school operations cannot lead to sustained school improvement. Indeed, CSR is grounded in the proposition that school reform must be comprehensive; that is, that a unifying mission or vision must drive changes to all aspects of school operations. As such, in addition to studying whether schools implemented CSR with fidelity, we examined whether schools implement CSR comprehensively.

To quantitatively evaluate schools' comprehensiveness of implementation, we rated schools as having low, medium, or high comprehensiveness based on the number of CSR dimensions they were implementing at high levels, i.e., the number of implementation indices for which they scored above the average level for our sample. Schools with low comprehensiveness implemented less than four indices at high levels, schools with moderate comprehensiveness implemented four to eight indices at high levels, and schools with high comprehensiveness implemented more than eight indices at high levels. Figures 5.3 and 5.4 illustrate these levels of implementation for CSR and non-CSR schools. They also show how the level of comprehensiveness changes over time.

Figure 5.3. Comprehensiveness of implementation, 2002
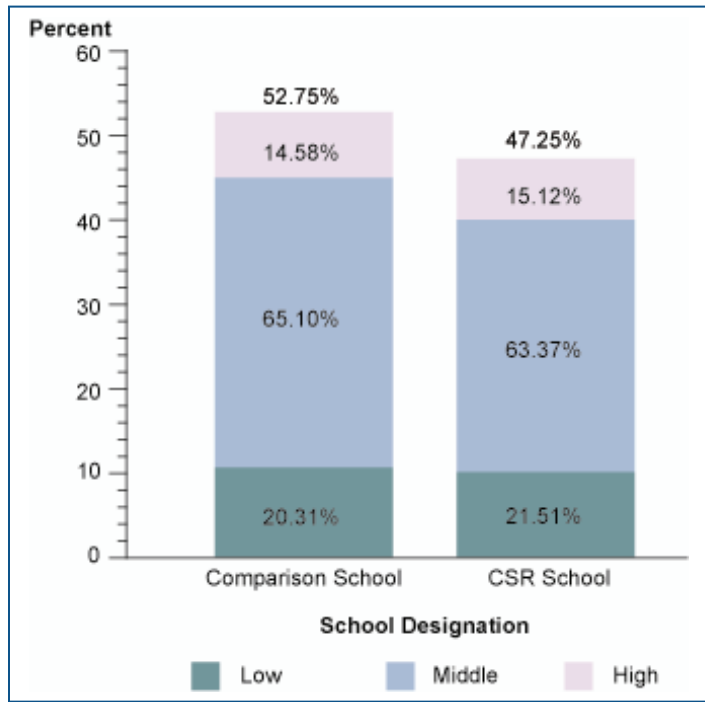
Most Schools Implement Only a Select Number of CSR Components. However, Their Implementation Becomes More Comprehensive Over Time.

In 2002, 22.6% of schools fell into the low comprehensiveness range, 63.8% into the moderately comprehensive range, and just 13.6% appear to be highly comprehensive. In year 2004, the overall level of comprehensiveness improved such that only 17.6% were of low comprehensiveness. The middle group also declined to 59% and almost one quarter of the schools (23.8%) had moved to being highly comprehensive.

CSR Schools Tend to Implement More Components Than Comparison Schools.

While most schools fell into our low or medium comprehensiveness categories, overall, schools implementing a CSR model were more likely to have a high comprehensiveness level than were comparison schools, both in 2002 and 2004. For the 2004 data, the differences between CSR and non-CSR schools were statistically significant at the 0.1 level. The generally low level of comprehensiveness could be attributed to selective implementation: schools may decide to implement only particular components of the CSR program, or schools may decide to implement different components sequentially, one after another.

Figure 5.4. Comprehensiveness of implementation, 2004
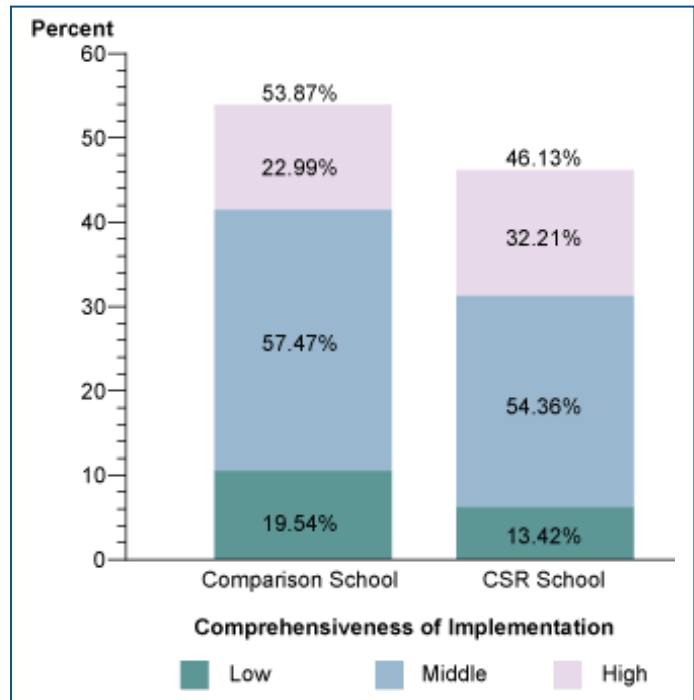
CSR Schools Implement Instructional Strategies More Comprehensively Than Comparison Schools.

To investigate comprehensiveness further, we examined the level of comprehensiveness of classroom instruction. The rationale for this is based upon the notion that although all components are integral to CSR, instructional activities are presumably most likely to have direct effects on student achievement and consequently schools would reasonably be more likely to focus on those activities and implement them more highly and comprehensively.

The composite measure of comprehensiveness of classroom instruction was created from the implementation indices for inclusion, curriculum, student grouping, pedagogy, and time scheduling. Values for this measure range from 0 to 5. About 2% of the schools in both years (2002 and 2004) had values of zero. About 34% implemented four or more components at or above average levels in both 2002 and 2004. There were statistically significant differences between CSR and non-CSR schools in 2004, at the 0.1 level. CSR schools were implementing classroom instruction-related practices more highly than non-CSR schools. Figures 5.5 and 5.6 illustrate these findings.

Figure 5.5. Comprehensiveness of implementation of classroom practices, 2002
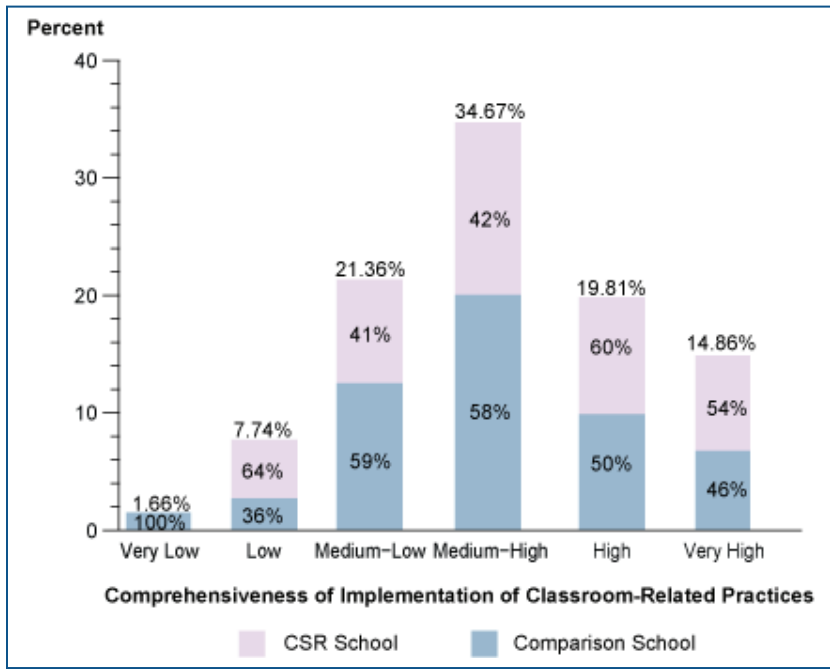
Figure 5.6. Comprehensiveness of implementation of classroom practices, 2004
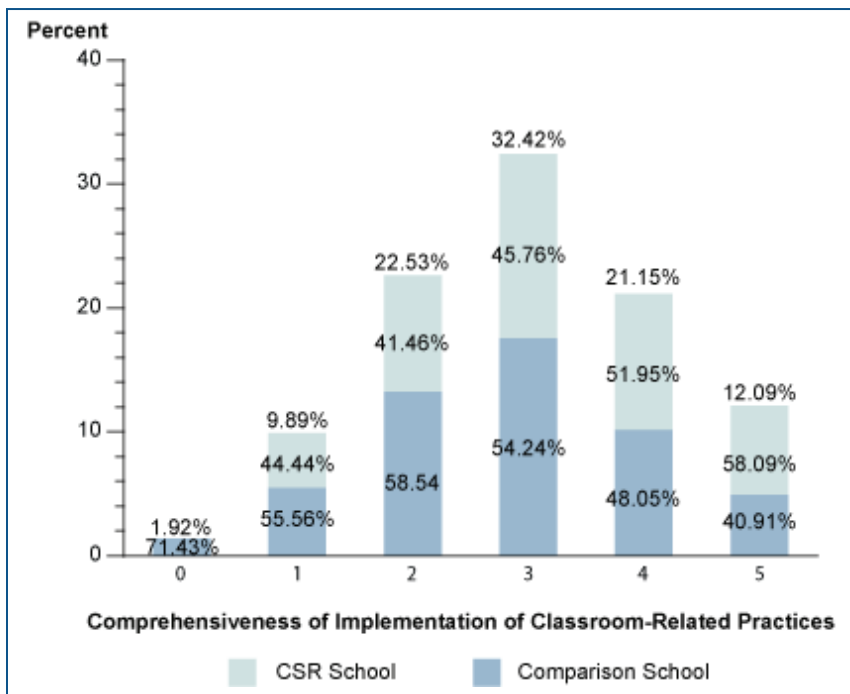
We also drew upon qualitative case study data to examine "comprehensiveness" of implementation, using ratings generated through the NLECSR Analytic Rubric. Figure 5.7 depicts the comprehensiveness ratings for each case study school. Figure 5.8 depicts the schoolwide use ratings for each case study school.

Figure 5.7. Comprehensiveness ratings for case study schools
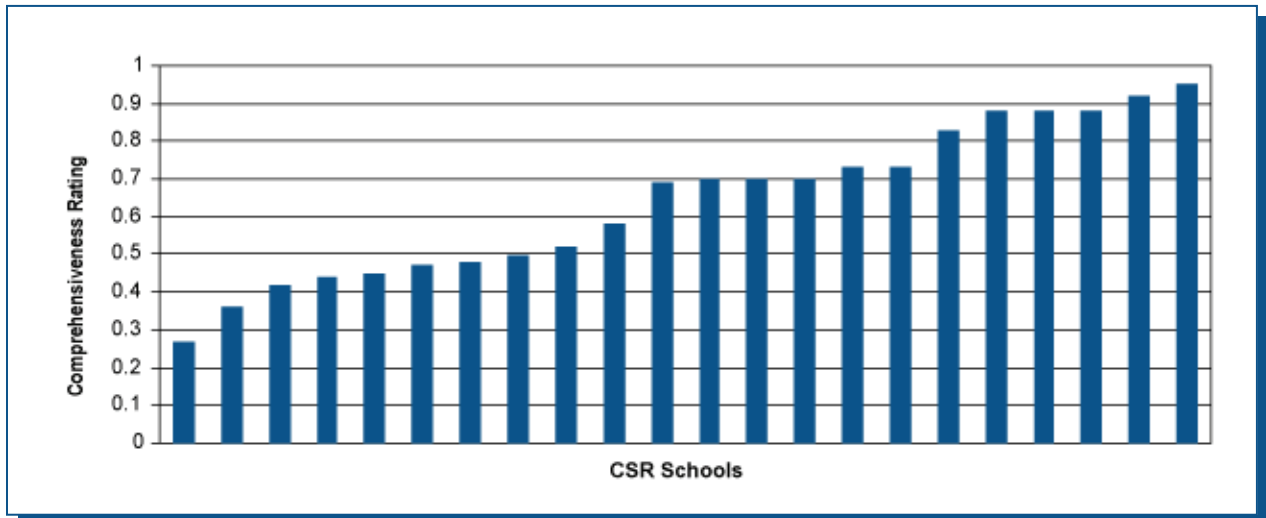
Figure 5.8. Schoolwide use ratings for case study schools

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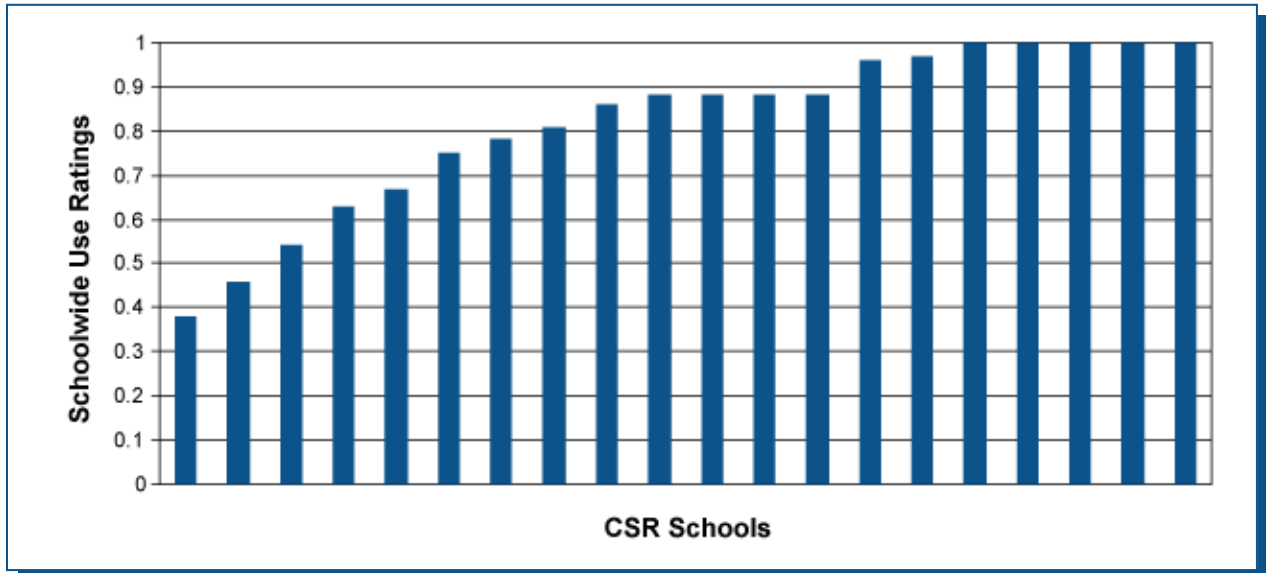
Most School Stakeholders Demonstrate Knowledge of CSR's Comprehensive and Schoolwide Nature.

We see in Figure 5.7 that most of the case study schools rate over 0.7 on the comprehensiveness scale and well over 0.7 on the schoolwide use scale. There is somewhat more variation in the ratings for the comprehensiveness scores than for schoolwide use: while the comprehensiveness scores range from 0.27 to 0.92, the schoolwide use scores range from 0.38 to 1. Drawing from these aggregate ratings, as well as specific aspects of the data from each of these schools, we categorized schools' combined scores into four groups to describe respondents' perceptions of their CSR models: acquainted, informed, knowledgeable, and fully articulate.

♦ Acquainted (0.25–0.40)—School-level stakeholders hold awareness of terminology associated with the model and limited understanding that CSR extends beyond personal activities.

♦ Informed (0.41–0.60)—School-level stakeholders hold awareness of CSR as one component in depth, and implementation is perceived across a few classrooms or a subset of teachers.

♦ Knowledgeable (0.61–0.80)—School-level stakeholders hold detailed awareness of at least two components in depth and that CSR at least spans more than one grade, but they fall short of expressing CSR as a schoolwide initiative.

♦ Fully Articulate (0.81–1.0)—School-level stakeholders hold detailed awareness of more than two components of the CSR model and that CSR is implemented across all grades and classrooms.

Ninety percent of the case study schools fell into the informed, knowledgeable, and fully articulate categories for comprehensiveness. Only the remaining 10% were in the acquainted category. Eighty-six percent of the case study schools fell into the knowledgeable and fully articulate categories for schoolwide use. The remaining were split between the informed and acquainted categories. Thus, in the majority of our case study schools, stakeholders exhibited moderate to high levels of understanding of the CSR models they had adopted. While understanding is not tantamount to implementation, it is a necessary precursor to successful implementation.

To investigate school conditions associated with varying levels of CSR consistency and comprehensiveness, we identified two schools that highlighted the extremes. Chamberland fell into the fully articulated category for comprehensiveness and consistency (0.88 and 1.0, respectively). Ivyton fell into the acquainted category for comprehensiveness and consistency (0.27 and 0.38, respectively). These two cases are described in-depth in the text boxes below.

A Case of Fully Articulated Comprehensiveness and School-wide Use: Chamberland

Chamberland Elementary is located in a high-poverty area of a large urban district, yet benefits from unusually high loyalty from parents, faculty, and administrators. Because public housing near the school was demolished, families moved out of the attendance zone, yet sought to keep their children at Chamberland. Teachers, too, expressed commitment to the school, with many teachers remaining at Chamberland until retirement or promotion. The principal commented, "Once they get here, they don't want to leave." The principal herself had spent her entire career at Chamberland, beginning as a substitute teacher in the 1960s and becoming principal 30 years later.

When NLECSR researchers visited Chamberland, the school had been implementing their CSR model for eight years, although funding for the model had ceased in 1996. Nonetheless, school-level stakeholders still expressed understanding of the model's core components. In particular, they described the use of committees as central to their decision-making efforts. As teachers explained, "all decisions are made [by committees]—those areas are academic performance, community involvement, school spirit, and discipline. Any problems that come about in that way, those problems are sent to that committee. Then the committee tries to work them out, and they send a report in turn to the principal with the suggestions that we have made. Everyone is on at least one committee. We meet once a month."

Initial training from the model developer established an important foundation for CSR implementation at Chamberland. In addition to off-site training, model trainers came to the school to instruct the teachers. According to the principal, "Then we had a coach who was also trained and was in the building every week, assisting and training the teachers." This training over the first three years consisted of 2-day in-service sessions on every phase of the program. In addition to that ongoing professional development, the program model required one of the school's teachers to be an onsite coach for model implementation, thus assuring onsite technical assistance.

A supportive professional community of teachers and strong principal leadership were also associated with the high level of awareness of the model and sustained CSR practices. Although rare, when teacher turnover did occur, school staff at Chamberland worked to ensure that new teachers were trained properly. Experienced teachers said that they tried to get the newer teachers to attend workshops so "they will learn what the rest of us already know." The combination of low teacher turnover and support for new teachers to learn about the model encouraged a deeper understanding of model components. The principal also monitored implementation of the model by visiting classrooms and encouraging the use of model specific instructional practices. In addition, teachers explained that, "The principal has an open door. Anything that you want to bring to the table is up for discussion."

At Chamberland, teachers believed the model had helped their schools. Teachers thought students benefited more from lessons because the model encouraged them to make connections between their everyday experiences and the instructional content. One teacher commented that her students enjoyed mathematics more since the model began. When asked if the model helped to achieve academic goals, a teacher reported, "Yes, because we are still using it now!"

A Case of Acquainted Understanding: Ivyton

Ivyton Elementary is located in a high-poverty area which the principal described as an "urban blight area" with few community resources. Like many urban schools, Ivyton experienced high levels of teacher turnover. In 2004, for example, the principal reported that 85% of her staff was new and that "My staff, currently, is 80% under the age of 27, so they are just like brand new."

When NLECSR researchers visited the school, Ivyton had been implementing ATLAS Communities for 6 years— although the current implementation had tapered to nearly undetectable levels. When they first started model implementation, it the principal described implementation of the model at Ivyton as intense: "It was ATLAS Communities, ATLAS Communities, ATLAS Communities." Six years later, however, only the principal of the school had much knowledge of the model. She commented that many teachers might not recognize the name of the model but would recognize the parts of the program—the few practices that persisted. Indeed, one of the few teachers familiar with the model noted that, "There is a trickle here and a trickle there, but it's not the model [we used to have]."

The principal and those few teachers with awareness of the model attributed the model's demise to the high rate of teacher turnover. The principal conceded that most teachers would not recognize the model or articulate the components, although "15% could still say, 'from A to Z, that this is the model.'" Another teacher observed, "People haven't been educated as to what [ATLAS Communities] is. And our school has a very high turnover rate for teachers." One teacher in the focus group who had heard of the model stated, "Now, [ATLAS Communities] was brought up this year. In the beginning of the year, they brought up the model. But I don't remember anything happening from there."

The school stakeholders at Ivyton did not describe any developer activities at the school. Professional development activities from the developer may have occurred during the model implementation phase, but the teachers were not receiving any model-related support at the time of the site visits in 2003 and 2004. Moreover, the principal did not describe any method for monitoring or supporting the implementation of the model components still in place at Ivyton.

Ivyton elementary is an example of a school in which there was limited understanding of the model and school stakeholders were vaguely familiar with model-related terminology. However, Ivyton faced a number of school-level challenges that influenced model understanding and implementation, the most dramatic of which was teacher turnover. This turnover rate is problematic in relation to reform because few of the teachers initially trained in the model remained, and the school no longer received professional development opportunities from the model developer. Furthermore, no structure appeared to be in place to inform the new teachers of model activities.

Conclusion

Changing practices in traditionally disadvantaged schools is hard work, which requires time, resources, and ongoing support. However, the analyses presented in this chapter indicate that it is indeed possible to effect change in low-performing schools in urban environments.

Most importantly, NLECSR data indicate that individual CSR models do stimulate different practices in schools. Thus, the specific set of activities advocated by model developers—that is, the essence of the model design—shape school-level activities in unique ways. Some models are implemented at higher levels than others, and some components are more likely to be fully implemented, but CSR does seem to be an effective mechanism for stimulating change.

Not surprisingly, implementation increases over time, with the highest levels of implementation in schools that have had their model in place for 3–5 years. Thus, while CSR can indeed stimulate change, it will be most pronounced if given adequate time to mature. Moreover, models will become more comprehensive over time—that is, schools appear to phase in model components over successive years.

While CSR has clearly changed practices in specific schools that formally adopt models, the set of assumptions that frame CSR appears to have permeated the educational landscape. That is, practices that

are endorsed by CSR model developers have become widespread, and were detected even in comparison schools in the NLECSR sample.

Changing practices is an important step in school improvement. But to what extent do these changes in practice stimulate improved student achievement, and to what extent can these strategies be sustained? The following chapters address these important questions.

Chapter 6: Building Social Capital

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Introduction

This chapter explores the relationship between the implementation of CSR models, social capital, and student academic achievement. Most credit Coleman (1988, 1990b) with conceptualizing social capital and applying it to educational settings. Coleman defined social capital in the context of education, and this chapter attempts to examine it in the context of CSR.

We review the broad and multifaceted literature on social capital and present an argument for the relevance of establishing a linkage between the social capital of teachers, CSR implementation, and academic outcomes. This chapter briefly reviews studies that address the social capital of teachers implementing CSR models, and argues why teacher social capital may be expected to improve student achievement.

The analysis section of the chapter presents the results of two separate analyses. The first analysis presents the results of measuring social capital among teachers as an outcome of CSR implementation. The second analysis presents the results of using social capital as a mediating variable between implementation and academic achievement. The chapter concludes with policy recommendations.

Theoretical Framework

The concept of social capital is thought of as a resource grounded in social relations (Burt 1992; Coleman 1988, 1990b; Granovetter 1973). Having social capital means understanding norms that people adhere to, and understanding the trust that links people in a variety of social settings. Having social capital may mean many things, including the presence of social ties (weak or strong) and the nature of such ties (cross-cutting or dense). In this chapter, we present analyses on social capital in the framework of CSR. Within the context of CSR, we view social capital as composed of two distinct parts: professional learning community and collective commitment.

This chapter focuses on these two dimensions of social capital—professional learning community and collective commitment—and we hypothesize that they are important to the improvement of instruction and student achievement. Professional learning community as a measure of social capital within schools includes the existence of collegial ties that are formed with the goal of improving instruction. Professional learning community should imply that teachers will meet, engage in formal and informal discussion groups and settings, and even feel a sense of cooperation. These networks allow for the creation of norms and expectations, and for the exchange of information about teaching. They also help to create conditions for social influence such that teachers using effective methods may be able to influence others to do the same. Collective commitment implies the presence of an agreement among teachers to engage in certain reform activities. Collective commitment as a measure of social capital posits the existence of stronger norms and expectations about student performance as a result of collective and consistent perceptions of the school's mission. In sum, the professional learning community perspective explores the ties formed

among teachers regardless of their opinions, and collective commitment examines the views and opinions formed and held by teachers regardless of the ties. According to social capital theory, both professional learning community and collective commitment among teachers are expected to affect student achievement.

The concept of social capital in school settings is not new. Most prior work has been descriptive in nature, and few studies have used comparison groups. Newmann, King, and Youngs (2000), for instance, argued that professional development is most successful when the school has a professional community that allows teachers to collaborate to improve their teaching. This assertion, however, is mainly supported by qualitative data and descriptive statistical analyses, with no comparison groups. Louis, Marks, & Kruse (1996) were able to demonstrate how a school's professional community is best fostered under specific conditions of the schools. Examples of these conditions included staffing patterns, scheduled planning time, and teachers' sense of empowerment. These studies revealed that the existence of a community can increase a teacher's sense of responsibility for student learning.

However, true community is often difficult to achieve within schools. Indeed, schools have generally been characterized as loosely coupled organizations that lack coordination among the parts in the system (Weick, 1976). This means that it is possible that leadership may be autonomous, and what the principal or district prescribes may not necessarily impact what happens inside the classroom. Studies of the occupational ethos of teaching further suggest that teachers are likely to favor working with students rather than collaborating with their colleagues. Lortie (1975), for instance, states that teaching is more about collecting psychic rewards from interacting with students, rather than working with colleagues (pp.192–196).

Additional studies of sociology in education (Bryk & Schneider, 2002; Miller & Rowan, 2006) have attempted to examine the links between students' academic achievement and social capital, but these studies do not discuss the role of school reform or specific school reform strategies. Bidwell and Yasumoto (1999), for instance, used social network analysis to explore the links between student achievement and social capital. Their findings challenged the notion that teachers normally act alone, and found, instead, that teacher networks influence how teachers engage in teaching. Yasumoto, Uekawa, and Bidwell (2001) extended the analysis of Bidwell and Yasumoto (1999), and their findings revealed that the density of communication among colleagues was related to the effectiveness of certain pedagogies and strategies, which in turn could affect academic growth. Thus, in essence, the results revealed that the social network of a school may be related to student academic achievement. In this chapter we explore these phenomena further in the context of CSR.

One question that remains unanswered, however, is why some schools experienced greater levels of social capital than others. Studies employing quasi-experimental designs that explicitly compare treatment and control schools may provide insight into the ways in which school reforms affect social capital. Such studies could also help us to understand how social capital may play a role in school reform, especially if these types of reforms affect student academic achievement. The next section revisits and reanalyzes social capital theory and introduces the hypotheses to be analyzed in this chapter.

Hypotheses

Analyses in this chapter address three hypotheses that explore the relationship between social capital, implementation of CSR, and student academic achievement. The first hypothesis is predicated upon the relationships between professional learning community and collective commitment. This hypothesis posits that social capital will affect the academic achievement of students enrolled in schools that adopt and implement externally developed CSR models. The second hypothesis measures the expected link

between CSR and social capital, by examining schools as loosely coupled organizations. The third hypothesis predicts that social capital may serve as a mediating factor for academic achievement and implementation.

Research Questions

This chapter addresses three research questions:

RQ 1: To what extent does the implementation of externally developed CSR models affect the level of social capital in schools?

RQ 2: To what extent does the implementation of specific CSR models affect the level of social capital in schools? This question seeks to test whether any CSR effect detected in answering RQ 1 can be traced to specific CSR models.

RQ 3: To what extent is social capital associated with student achievement?

The next section will address the data sources and the analytic approaches used to examine the data.

Methods/Analytical Approach

Data Sources

Although the full NLECSR school sample included 649 schools, this chapter draws on data from only 359 schools. The reduction in sample size resulted from the calculation of implementation scores (described in chapter 5). A comparison of the analytic sample of 359 schools and the larger sample showed not significant differences between the two social capital measures and mathematics and reading assessment scores. The teacher implementation measures are listed below (see chapter 5 for a full description):

- ♦ Organization/governance
- ♦ Professional development/Technical assistance
- ♦ Curriculum
- ♦ Instruction
- ♦ Inclusion
- ♦ Technology
- ♦ Time scheduling
- ♦ Student grouping
- ♦ Assessment
- ♦ Data-based decision making
- ♦ Parental involvement

Analytical Models

The first research question probes the relationship between the implementation of externally developed CSR models and the level of social capital in schools. To answer this question, we analyzed the two measures of social capital (professional learning community and collective commitment) separately. We

used a series of dummy variables to represent CSR models and controlled for important variables, including social capital measures from the prior year. For this research question, and for the remaining research questions, we used multilevel regression models.

The second research question asked the extent to which any observed CSR effect on social capital can be traced to specific CSR models. To test this hypothesis, we modeled the interaction between the level of implementation and comprehensiveness of implementation across schools. First, we modeled the interaction to explore whether these interactions would have an effect on the overall measure of social capital. Second, we did this to investigate whether including both the level of implementation and the comprehensiveness of implementation would reduce the effects of social capital. The underlying research hypothesis was that that some CSR models may actually promote social capital, and therefore proper implementation alone could account for these changes.

The third research question asked the extent to which social capital is associated with student achievement. The hypothesis associated with this question predicted that increases in social capital would lead to a change in student achievement scores from the years 2001 to 2002, both in mathematics and in reading, although the data would be analyzed separately. This question was explored analytically by using social capital, a series of dummy variables representing CSR models, as well as other covariates and achievement scores also used as dummy variables for the baseline academic achievement scores.

Schools were the primary unit of analysis for this chapter. The data were collected on different levels (principal and teacher levels) and aggregated to the school level to generate school-level scores for various measures. Finally, academic achievement scores in mathematics and reading were obtained from participating districts, and these data were also aggregated at the school level.

Data were aggregated and then prepared for analyses by combining the outcome measures collected in years 1 and 3, using the year 1 outcomes as statistical controls. This procedure allowed us to model the state of the school during year 3, while adjusting for the initial differences that the schools presented during year 1. The first analysis assessed the extent to which the implementation of CSR and individual CSR models affected the improvement of social capital among CSR schools, and the reasons for these effects. The following is a general representation of the models used to explore RQ 1 for this chapter.

$$SocialCapitalYear\,04_{ij} = \beta_{00} + \beta_{10} * SocialCapitalYear\,02_{ij} + B_1 * CSR\_Model_{ij} + \beta_{20} * IMP_{ij}$$
$$+ (Covariates)$$
$$+ u_{0j} + r_{ij}$$

—Equation (1)

A postscript i stands for a school (level 1) and a postscript j stands for a district (level 2). An error term u_{0k} is a district-level random error, while the other error term rij is a school-level error. *SocialCapitalYear*04 is either a professional learning community or a collective commitment measure derived from the 2004 data. *SocialCapitalYear*02 is made of the same social capital measure derived from the 2002 data. *CSR_Model* is a general representation of a series of dummy variables indicating each of the CSR models under examination. Because the reference category is a comparison school, a matrix B_1 hosts a set of coefficients obtained as the difference between the comparison schools and the schools that employ each specific CSR model. *IMP* is a measure of implementation.

The second analysis answered RQ 3 by exploring the relationships among social capital, the implementation of specific CSR models, and student outcomes in mathematics and reading. The analysis for this research question used the same data set and multilevel models as the previous research questions, but the outcome measures were different. Unlike the outcomes for RQ 1, which were school-based mean academic achievement outcomes (scores), the changes in academic achievement scores from academic year 2001 to academic year 2002 (spring to spring) were used because scores for 2003 were unavailable. The social capital measures from Year 1 of the study (academic year 2002) were also used in the analysis.

For both of the multilevel models, social capital measures such as school means, professional learning community, and collective commitment were used as predictors. The CSR models were entered into both of the analyses as a series of dummy variables, and the reference category, therefore, was the comparison schools. The academic outcomes were measured as school-level mean academic achievement scores in reading and mathematics. The following is a general representation of the models used to explore RQ 3 in the social capital chapter.

$$AchievementChange0203_{ij} = \beta_{00} + \beta_{10} * Achievement\_Score\_02_{ij} + B_2 * CSR\_Model_{ij} + \beta_{20} * IMP_{ij}$$
$$+ \beta_{30} * SocialCapitalYear02_{ij} + (Covariates)$$
$$+ u_{0j} + r_{ij}$$

—Equation (2)

The variable names, parameters, and postscripts mean the same as in equation (1), except for the following two variables. *AchievementChange*0203 is the change in achievement scores between 2002 and 2003, the subject being either mathematics or reading. *Achievement_Score_*02 is the same achievement scores from 2002.

Measures

The first measure of social capital was professional learning community, which measured the degree to which teachers were socially connected to one another over professional matters. Activities that would be defined as professional learning community activities were taken directly from the surveys distributed among the teachers. They included planning lessons or courses with other teachers, diagnosing the needs of other students with other teachers, exchanging feedback with other teachers based upon classroom observations, acting as a coach or mentor to other teachers or staff in the school (or receiving coaching or mentoring), and participating in one or more teaching communities. The response options were presented in the surveys in a Likert scale format. Response options included *never, a few times a year, once or twice a month, once or twice a week, almost daily,* and *daily.* The reliability of the scales for these responses was 0.78.

The second measure of social capital was teachers' collective commitment. This variable measured the level of teachers' shared commitment to teaching in general. Collective commitment was seen as a composite of several activities, which appear in this analysis in the form of variables. Activities measured as collective commitment included having a common understanding of the objectives that they were trying to achieve with the students, having clear goals and priorities for the school, the extent to which most of the teachers had similar values and philosophies of education, the extent to which most colleagues shared their beliefs and values about the roles of the central mission of the school, and the extent to which most schools shared a forward vision for student learning. Similar to the previous measures, the survey questions were presented in the form of a Likert scale, ranging from *strongly*

disagree and *disagree* to *agree* and *strongly disagree.* The reliability of the mean for all of these questions was 0.89.

The analyses in this chapter used five CSR variables, which specifically included four individual CSR models, and a fifth category for "other," which consisted of several other models being implemented in a few schools. The comparison schools were used as a reference group category, and they simply were omitted in the regression models. The analysis also used implementation variables described in chapter 5.

The final measures used in this analytical model were school mean and academic achievement in mathematics and in reading. For academic achievement outcomes, as was discussed in the academic achievement chapter, scores were standardized by grade, and so we computed school averages. The underlying logic guiding this procedure was that all tests were measuring the same construct, and that the performance distributions within the different grades and within districts would be the same. This is similar to the steps taken in chapter 7.

All of our regression models included the following covariates: middle school indicator (dummy coded), school size by student enrollment, perceived challenge level by principal (based on principal survey questions), percentage minority, percentage free and reduced-price lunch, teachers' average number of years of service, percentage of advanced degree holders among teachers, and average common planning time.

Findings

Some CSR Models Stimulated Higher Levels of Social Capital

Results of the first set of analyses reveal that schools that implemented certain CSR models experienced higher levels of collective commitment than did their comparison school counterparts. To facilitate the interpretation of the coefficients, all of the interval scales were standardized as Z-scores. The analysis modeled the level of school-mean social capital. Panel 1 of model 1 in Table 6.1 below presents the results of the analysis for the collective commitment measure of social capital. Of the eight models included in the overall analysis, two models showed significant results for collective commitment. They were ATLAS Communities (SD = .53, $p < .01$) and Accelerated Schools Project (ASP) (SD = .72, $p < .01$). We also controlled for common planning time, so this was not a likely explanation for these differences. Moreover, schools that implemented ASP ($p = 13$), ATLAS Communities ($p = .11$), and Co-nect ($p = .08$) experienced higher amounts of social cohesion than their comparison group counterparts. These differences, though, were not significant.

The second research question of the chapter asks the extent to which the implementation of specific CSR models affects the level of social capital in schools. This research question hypothesizes that it is possible that the very comprehensive nature of CSR itself could be one reason why some CSR schools and models overall experience higher amounts of social capital than do their comparison group counterparts. Panel 2 of models 1 and 2 tested the extent to which the effects of CSR could be explained by the comprehensiveness of the models. Model 1 measures collective commitment and model 2 measures social cohesion. The analysis for the research question also added an interaction term that measured the interaction between the implementation index and the comprehensiveness index. A school received high ratings on this later measure only if it implemented all of the 11 CSR implementation criteria uniformly and consistently. Testing the interaction between the comprehensiveness index and the overall implementation index helped to inform the analysis whether consistent and high levels of implementation did indeed play a role in the acquisition of increased and improved social capital ratings or findings.

Table 6.1. Results of modeling the relationship between professional learning community and collective commitment by school characteristics, model, and selected teacher attributes

	Professional Learning Community, Model 1 n = 295			Collective Commitment, Model 1 n = 295			Professional Learning Community, Model 2 n = 295			Collective Commitment, Model 2 n = 295		
	Effect	Error		Effect	Error		Effect	Error		Effect	Error	
Intercept	-0.118	(0.122)		-0.068	(0.106)		-0.079	(0.125)		-0.067	(0.110)	
Collective commitment or Professional Learning Community 2001	0.166	(0.062)	***	0.35	(0.056)	**	0.165	(0.062)	***	0.35	(0.056)	**
School has middle grades	0.059	(0.145)		-0.179	(0.131)		0.066	(0.144)		-0.179	(0.131)	
School size	0.008	(0.060)		0.037	(0.054)		0.005	(0.060)		0.037	(0.054)	
Math achievement 2003	0.030	(0.063)		0.137	(0.056)	**	0.027	(0.063)		0.137	(0.057)	**
Challenging environment index	-0.041	(0.066)		-0.111	(0.060)	*	-0.043	(0.066)		-0.111	(0.060)	*
Percentage of minority students	0.136	(0.067)		0.001	(0.060)		0.140	(0.067)	**	0.002	(0.060)	
Percentage of students eligible for free/reduced price lunch	-0.001	(0.045)		-0.015	(0.040)		0	(0.045)		-0.015	(0.040)	
Teacher tenure	-0.159	(0.060)		0.099	(0.054)	*	-0.157	(0.060)	***	0.099	(0.054)	*
Advanced degrees	0.053	(0.065)		0.010	(0.058)		0.052	(0.065)		0.010	(0.059)	
Common planning time	0.046	(0.058)		0.032	(0.052)		0.046	(0.058)		-0.032	(0.052)	
Implementation stage data are missing	-0.104	(0.329)		0.006	(0.297)		-0.097	(0.329)		0.006	(0.297)	
Middle implementation stage, 3–5 yrs	-0.103	(0.277)		-0.049	(0.250)		-0.090	(0.277)		-0.049	(0.250)	
Older implementation stage, over 5 yrs	-0.062	(0.228)		-0.072	(0.205)		-0.045	(0.228)		-0.071	(0.206)	
Early implementation stage, 0–3 yrs	0			0			0			0		
Accelerated Schools Project	0.606	(0.320)	*	0.540	(0.287)	*	0.541	(0.323)	*	0.538	(0.292)	*

	Professional Learning Community, Model 1 n = 295			Collective Commitment, Model 1 n = 295			Professional Learning Community, Model 2 n = 295			Collective Commitment, Model 2 n = 295		
	Effect	Error		Effect	Error		Effect	Error		Effect	Error	
ATLAS Communities	0.714	(0.361)	**	0.729	(0.326)	**	0.669	(0.362)	*	0.727	(0.328)	*
Co-nect	0.747	(0.349)	**	0.398	(0.314)		0.715	(0.350)	**	0.397	(0.316)	
Other CSR model	-0.152	(0.322)		0.103	(0.290)		-0.110	(0.324)		0.105	(0.292)	
Success For All	0.062	(0.243)		0.056	(0.219)		0.045	(0.244)		0.055	(0.220)	
No CSR model	0			0			0			0		
Overall implementation score	0.339	(0.081)	****	0.278	(0.073)	****	0.326	(0.082)	****	0.278	(0.074)	****
Comprehensiveness of implementation levels	0.037	(0.077)		0.006	(0.069)		0.048	(0.078)		0.006	(0.070)	
Comprehensiveness of high implementation levels							-0.064	(0.053)		-0.002	(0.048)	
Between district variance	0.077		*	0.048			0.072		*	0.048		
Residual variance	0.841		****	0.681		****	0.841		****	0.683		****

Note: * = 0.10; ** = 0.05; *** = 0.01; **** = 0.001.

The results of the analysis revealed that neither the overall level of implementation, nor the comprehensiveness of implementation alone increased social capital among schools implementing CSR models. The analysis therefore concluded that there was no significant relationship between an increase in social capital and comprehensiveness among schools implementing CSR models compared to the gains of their comparison group counterparts. This makes sense, as both schools were implementing the CSR-like practices.

Specific Model Components Promote Social Capital

Overall, two CSR models—ASP and ATLAS Communities—experienced an increase in the two measures of social capital (professional learning community and collective commitment). Hence, in some cases, externally developed models can increase social capital by developing a collaborative, trusting environment. Of further interest, however, is the fact that differences in comprehensiveness did not explain the differences in social capital increases between the two groups.

To probe this issue further, we sought to determine if the structures of the models could explain the lack of differences between the two groups. We examined additional sources of information, primarily responses to surveys completed by the model developers. Analyses of theses surveys revealed that two models (ATLAS Communities and ASP) had the highest ratings in the CSR governance component. These differences were statistically significant, and no other models had similar ratings. This is a seemingly logical finding, in light of the fact that governance was one of the key descriptions used to measure social capital, especially for collective commitment. It is therefore reasonable to conclude that the design of the CSR models is somewhat responsible for greater social capital gains for CSR schools implementing ATLAS and ASP. Qualitative data also revealed that these two models in particular also stressed the importance of "community development" in the schools, which is measured in the form of cohesion.

Our next step, then, was to analyze the relationship between the implementation of specific model components and social capital, to determine if individual components might explain the differences detected in earlier analyses. The implementation index (as described in chapter 5) is composed of 10 individual implementation indices, and for this analysis we decided to explore each of the components individually, instead of using the overall implementation index. The results of this analysis in the form of coefficients are revealed in Table 6.2. The outcomes and predictors for this analysis are presented in the form of Z-scores. The results show that variables related more closely to teaching tended to be more significantly related to social capital than other variables. Some of these variables included, technology use, assessment, pedagogy, inclusion, and professional development. The results also revealed that the effects of many of the indices not related to teaching were weak.

Table 6.2. Effect of implementation measures on social capital, 2002

	Collective Commitment n = 295			Professional Learning Community n = 295		
	Estimate	SE	Probt		Estimate	SE	Probt	
Governance implementation index	0.21	(0.06)	0.000	****	0.14	(0.06)	0.033	**
Technology implementation index	0.15	(0.06)	0.009	***	0.15	(0.06)	0.020	**
Assessments/standards implementation index	0.17	(0.05)	0.002	***	0.23	(0.06)	0.000	****
Curriculum implementation index	0.14	(0.06)	0.016	**	0.10	(0.06)	0.113	
Parent involvement implementation index	-0.05	(0.06)	0.368		-0.06	(0.07)	0.345	
Pedagogy implementation index	0.17	(0.07)	0.021	**	0.28	(0.08)	0.000	****
Time scheduling implementation index	-0.03	(0.06)	0.686		0.00	(0.07)	0.961	
Student grouping implementation index	0.09	(0.06)	0.120		0.05	(0.06)	0.418	
Inclusion implementation index	0.07	(0.06)	0.254		0.18	(0.07)	0.007	***
Professional development implementation index	0.28	(0.06)	0.000	****	0.44	(0.06)	0.000	****

Note: * = 0.10; ** = 0.05; *** = 0.01; **** = 0.001.

Collective Commitment Is Associated With Achievement Gains in Reading

Having determined that CSR models may be associated with increased social capital, we turn to the question of student outcomes. That is, does increased social capital produce student achievement gains? Model 1 assessed the effects of CSR on academic achievement on both the mathematics and the reading test scores. This model added measures of social capital, specifically professional learning community and commitment, and further explored the effects of these measures upon mathematics and reading scores. Overall, both measures had an effect upon academic achievement. The examination of the effects of the measures of social capital upon academic achievement yielded mixed results. Specifically, collective commitment had a positive and significant effect upon academic reading ($p < .05$), it did not have a significant effect upon mathematics achievement outcomes ($p = 0.75$). In reading, collaborative commitment once again had a positive and significant effect on the academic achievement outcomes ($p < .05$). Professional learning community had a positive effect upon reading also, but this effect was not significant.

To summarize the results, the implementation of CSR models themselves did not have an effect upon the change in academic achievement over the years, but one of the individual measures of social capital had a positive and significant effect on academic achievement. The overall analysis, though, did not support the hypothesis that the effect of CSR on academic achievement is mediated by social capital. Interestingly, collective commitment seemed to have had an independent main effect upon academic achievement for both mathematics and reading. Of additional interest is that two CSR models in particular experienced greater effects as a result of social capital than did any of the other CSR models.

Conclusion

The results of the research questions in this chapter have revealed that some individual CSR models experienced greater increases in social capital than did others. Our statistical analyses were also able to identify possible reasons for these findings; that is, the CSR models that experienced higher social capital were actually designed to improve the measures that we use to define social capital in this paper, such as collective commitment and professional learning community.

The analyses were unable to prove the underlying hypotheses for RQ 3, which did not find any support for the idea that social capital may mediate the effects of CSR. Even for this analysis, although we were unable to detect CSR effects among the individual models, collective commitment had a positive effect on academic achievement in both mathematics and in reading. If we were to summarize the results of the findings, we could conclude that if social capital is built into a model design, then it is likely to increase or to improve when the model is implemented, and model implementation in turn is likely to promote student academic achievement.

Chapter 7: Improving Student Achievement

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Introduction

The research questions that guide the analyses in this chapter investigate the relationship between the implementation of CSR and student achievement. The research questions also explore the relationships between implementation and academic achievement.

The analyses in this chapter investigate not only the effect of CSR on academic achievement, but also the extent to which the implementation of a particular CSR model was related to a school's capacity to improve student academic achievement. This chapter also discusses various factors influencing the relationship between implementation and student achievement, which lead to decisions to either sustain or not sustain the model. In this way, it links the preceding chapter on implementation to the next on sustainability. The results of the analyses in this chapter have both research and policy implications.

This chapter focuses on the first NLECSR research question (described in chapter 1): How effective are specific externally developed, research-based CSR models in improving the achievement of all students? Broadly speaking, successful CSR model implementation is hypothesized to produce two major changes in the CSR schools. First, CSR schools are expected to redesign themselves organizationally upon adoption of their externally developed models. Secondly, the restructuring and organizational changes resulting from implementation are expected to produce gains in student achievement. The analyses conducted in this chapter address the second expected change, which specifically examines the relationship between implementation of CSR models in schools and improvement in student academic achievement.

Organization of the Chapter

Following this introductory section, we describe the methods used, analytic approach taken, and empirical results. These sections describe both the effects of CSR on student achievement and attempt to disentangle the effects of different components of CSR on achievement.

Theoretical/Conceptual Framework

Herman et al. (1999) reviewed 24 CSR models and found that only 3 had rigorous evidence demonstrating effects on student achievement. These 3 models were Direct Instruction (DI) and Success For All (SFA) for students in grades K–6, and High Schools That Work (HSTW) for students in grades 9–12. Additional models shown to have marginal effects included Community for Learning, Different Ways of Knowing (DWOK), Expeditionary Learning/Outward Bound (ELOB), and the School Development Program (SDP).

Consistent with this work, Borman's recent meta-analysis (Borman et al., 2003) found much the same thing. Borman and his colleagues summarized findings from existing studies on the overall effects of

CSR, and concluded that the effects of CSR on student achievement were positive overall, and promising. They stated that some of the earlier findings may be less reliable because there may have been less rigor in the designs, and because most of the evaluations may have been conducted by the developer (Borman et al., 2003). The authors also cautioned that in some cases, evaluations conducted by the CSR developers may have yielded estimates of effects higher than evaluations performed by third-party evaluators. Finally, the authors caution that based upon the rigor of the design, more rigorous evaluations could actually yield more reliable and less significant effects than less rigorous designs. Specifically, the authors showed that studies using experimental or quasi-experimental treatment–control comparisons may yield effect estimates that are more accurate and usually lower than those of studies based upon analyses of CSR pre- and postgains alone. An earlier review of schoolwide reform models (Fashola & Slavin, 1996; Slavin & Fashola, 1998) also revealed inconsistent effects of schoolwide reform models upon student achievement.

Several studies have sought to determine the achievement effects of specific CSR models. A 1996 evaluation of the of the Success For All (SFA) program found that SFA had a significant effect on student achievement (Slavin et al., 1996). Borman et al. (2005) also conducted an evaluation of SFA, and they too found that the implementation of SFA had significant effects upon students' reading scores. Comer (1988) conducted an evaluation of the School Development (SDP), and he found that SDP had a positive statistically significant effect on student academic achievement. Two independent evaluations of the SDP program were conducted both in 1999 and in 2000 (Cook et al., 1999; Cook, Hunt, & Murphy, 2000). However, these studies revealed inconsistencies within the SDP program in Chicago (Cook, Hunt, & Murphy, 2000) but not in Prince George's County, MD (Cook et al., 1999). A study by Ross & Lowther (2003) also revealed mixed results on the student achievement effects of a single model, in this case, the Co-nect model. Another evaluation examined the academic achievement of elementary school students in schools adopting the Accelerated Schools Project (ASP) model (Bloom, Ham, Melton, & O'Brien, 2001). Results of this evaluation did not present inconsistent results, but the researchers specifically reported that after the schools had implemented the model for at least 5 years, third-grade students performed better in mathematics and reading compared to the achievement level of third graders prior to adoption of their schools' CSR model.

Inconsistencies in the studies cited above prompt questions concerning both the relationships between the individuals conducting the evaluations and the results. But such explanations are not sufficient—other factors are likely to account for differences in the measured effect of CSR on student achievement. The next section discusses research studies that have explored a key explanation for differences in results of academic achievement among students in CSR schools: the level of implementation of the CSR model.

Relationship Between Variation in Implementation Level and Student Academic Achievement Improvement

A few studies address the variation in both the level of implementation and consistency of implementation across components. Desimone (2002) and Kurki, Aladjem, and Carter (2005) found variations in the level of implementation and consistency of implementation among CSR model implementing schools. Glennan (1998) and Berends, Kirby, Naftel, & McKelvey (2001) found that some schools may experience different challenges and difficulties during the initial adoption and implementation processes, thus electing to phase the implementation of CSR at a much slower than normal pace. Bodilly (1996) and Smith et al. (1997) offer yet another possible reason for this type of variation, suggesting that CSR models can be successfully implemented in schools if the model emphases are aligned with priorities in school and district policies. Priority conflicts between CSR implementation and school and district policies are likely to lead to problems with regularly scheduled implementation.

Fast, Aladjem, Shive, Herman, and Carter (2001) provided some insight into which components of CSR were more likely to be implemented. They explained that many CSR models can be distinguished on the basis of the centrality of certain key specific components of models and the extent to which they are more likely to be implemented in schools. The different models are thus likely to yield differing results depending on their areas of emphases and centrality. Finally, Herman et al. (2000) provided insight about patterns of implementation based upon different model structures and emphases. Their analyses revealed that structure-based models that focus on instruction or curriculum were more likely to be implemented consistently than were philosophy-based models. Taken together, this set of studies provides some insight about the realities of the challenges of CSR implementation, and possible reasons for differences in results.

Hypothesized Relationship Between Implementation and Improvement in Student Achievement

The main theoretical underpinning behind the hypotheses presented in this chapter is that two main factors influence the achievement of students in schools implementing CSR: time and implementation level. The reasoning is that it takes time to implement a CSR model with fidelity, and only when the model is implemented faithfully can student achievement be expected to improve significantly. This chapter hypothesizes that it will take at least 2 years to reach this level and to reap the academic rewards. If the implementation of the model is affected by even some of the factors mentioned, then implementation is expected to be interrupted, and this is expected to negatively affect academic achievement scores and outcomes. In fact, academic achievement is expected to decline even if implementation is flat and for the initial gains in student achievement to lag even more (or for the initial gains in academic achievement to be lower).

This chapter also hypothesizes that there is a nonlinear relationship between time, implementation of CSR models, and academic achievement. The relationship is described as nonlinear because we hypothesize that schools will make minimal achievement gains during the first 3 years of implementation, substantial gains during years 3–5, and modest gains thereafter.[30] What makes this relationship nonlinear, however, is that the unidirectional linearity between the three factors (time, implementation, and academic achievement) lasts only 2–3 years at most, and then it usually slows down (declines), or even stops after 5 years of implementation. Thus, the relationship becomes curvilinear as is demonstrated in Figure 7.1.

This chapter focuses on two specific research questions.

RQ 1: To what extent do students enrolled in schools implementing externally developed CSR models improve significantly on state- or district-administered mathematics and reading assessments compared to their peers in non-CSR comparison schools?

RQ 2: To what extent is the level of implementation of a CSR model associated with increases in student academic achievement performance?

Methods/Analytical Approach

This section describes data sources, analyses and measures used, creation of variables, rationales for the creation of the variables, specific data used, and analysis-specific caveats as well as technical challenges.

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[30] In this chapter we refer to these three categories of schools as young, middle-aged, and old schools.

Figure 7.1. Expected relationship between student achievement and CSR implementation by implementation year
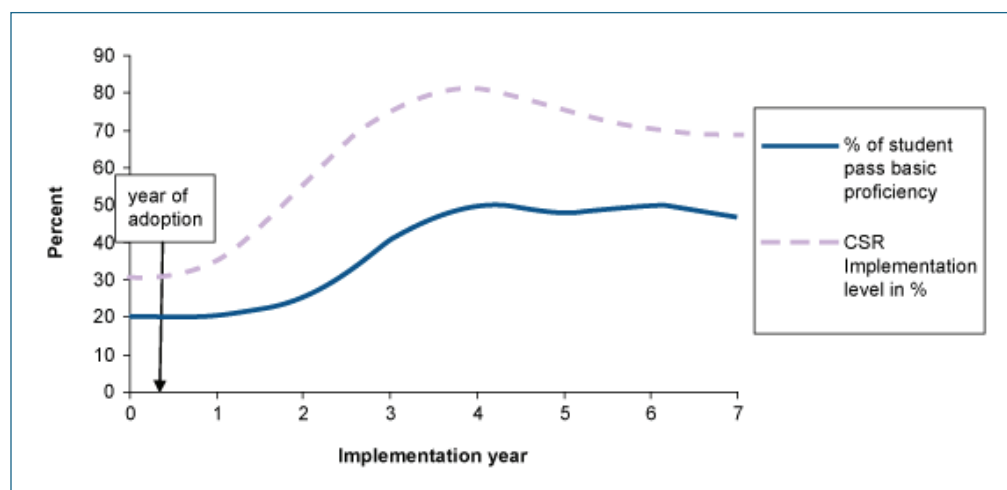
Data

The data used in this chapter is a subsample of the original sample, which consists of a total of 649 schools in 21 districts in 16 states. Data were collected in waves over a total period of 3 years in the form of surveys and various forms of standardized academic, statewide administered achievement test scores. Although the duration of data collection lasted 3 years, some of the surveys were administered for 2 years, and others were administered for 3 years. The surveys in the analyses described in this chapter are the teacher surveys that were administered in 2002. The implementation data used are described in chapter 5. Schools were selected as described in chapter 2. Table 7.1 shows the distribution of treatment schools by model.

Table 7.1. Number of pairs of schools matched to specific CSR programs, 2002

CSR Model 2002	Frequency	Percentage
Accelerated Schools Project	18	15.6
ATLAS Communities	7	6.1
Co-nect	18	15.7
Expeditionary Learning/Outward Bound	6	5.2
Modern Red Schoolhouse	6	5.2
Success for All/Roots and Wings	58	50.4
Turning Points	2	1.7
TOTAL	115	100.0

The main school background variables used to match the treatment and comparison schools were students eligible to receive free and reduced-price lunch, the population of minority students enrolled in the schools, and two additional variables, school size and the average student–teacher ratio.

Table 7.2 shows that the CSR and comparison schools were similar in terms of the four background variables, revealing minimal differences between the two groups. The total number of schools used in the final analyses based upon propensity matching was 115. Attrition in the sample was due to missing data.

Table 7.2. Descriptive statistics of school background variables for CSR and comparison schools

Variable	CSR Schools		Comparison Schools		Difference
	Mean	SD	Mean	SD	Mean
Proportion of students eligible for free or reduced-price lunch	0.78	0.20	0.80	0.18	-0.02
Proportion of minority students	0.90	0.18	0.92	0.16	-0.02
School size (unit per 1,000 students)	6.71	3.83	6.72	4.88	0.00
Average student–teacher ratio	16.76	3.84	16.77	4.09	-0.01

Note: n = 115.

The main school-level implementation measures used in these analyses were primarily the teacher surveys. The maximum implementation score possible for any component was 1.0, and the minimum was zero. The maximum implementation score across models for the treatment schools was 0.89 (pedagogy), and the minimum score was 0.53 (the use of technology in instruction) (Table 7.3). The maximum implementation score for the comparison schools was .88 (student grouping), and the lowest implementation score for this group was 0.53 (use of technology in instruction). Overall, the average score for each of the groups was 0.75, thus showing a striking similarity between treatment and comparison groups in terms of the implementation measures.

Table 7.3. Descriptive statistics of implementation measures of the paired schools for school-level achievement analyses

Implementation Indices	Component	CSR Schools			Comparison Schools		
		N	Mean	SD	N	Mean	SD
Influence of assessments/standards	Assessment	102	0.76	0.06	103	0.75	0.07
Use of assessments	Assessment	108	0.87	0.04	112	0.86	0.05
Curriculum	Curriculum	92	0.82	0.07	94	0.81	0.07
Parent/community involvement	Parental involvement	97	0.57	0.10	101	0.58	0.10
Implementation of pedagogy	Pedagogy	98	0.89	0.10	98	0.86	0.12
Teaching time	Instruction	108	0.84	0.15	112	0.84	0.15
Student grouping	Instruction	108	0.87	0.10	112	0.88	0.07
Governance	Governance	108	0.67	0.10	112	0.68	0.09
Inclusion	Instruction	97	0.73	0.19	101	0.74	0.18
Professional development, engagement level	Professional development	102	0.73	0.10	103	0.72	0.10
Professional development, type	Professional development	108	0.74	0.14	112	0.77	0.14

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		CSR Schools			Comparison Schools		
Professional development, emphasis	Professional development	108	0.70	0.07	112	0.71	0.08
Use of technology in instruction	Instruction	102	0.53	0.16	110	0.53	0.14
AVERAGE			0.75			0.75	

Description of Achievement Data

School-Level Data

The initial sample of school-level mathematics and reading achievement data were gathered from years 1999–2003 and consisted of data from 21 districts and 268 schools. The data were aggregated by state at the school level. The tests administered varied from district to district, with varying psychometric qualities, and the data were reported in various forms. In order to be able to compare the results across districts and tests, it was necessary to standardize the results by standardizing the tests across the districts and converting them into Z-scores. The tests and their psychometric qualities in their original form are presented in appendix Table 7.1.A. Another positive attribute of converting these test scores into Z-scores is that although not all the school districts test their children in the same grades, the Z-scores now make it possible to generalize the results on a schoolwide level. Aggregating and standardizing the scores at the school level also allows one to obtain a more reliable estimate of the school-level academic achievement. The grade-level scores used for the students were the average test scores of students in grades 2–5 for the elementary school level, and test scores of students in grades 6–8 for middle school students.

In some cases, more than one type of test scores was reported for each school. When this occurred, the best test score, based upon the score reported and the availability of multiple years of scoring was used. Examples of different types of scores provided included scale scores, normal curve equivalents, percentile ranks, and/or the percentage of students scoring at each proficiency level. Although many of the schools provided three different proficiency levels (at, above, and below level), when proficiency levels were used in the analyses, the lowest proficiency levels were used in this study, because CSR schools are generally composed of students who generally perform at the lowest proficiency levels.

Table 7.4 reveals that students in CSR schools began with lower test scores than their counterparts in the non-CSR schools during the 1998–1999 school year in both reading and mathematics.

Table 7.4. Average school-level mathematics and reading Z-scores by year

Subject	School	1998–99	1999–2000	2000–2001	2001–02	2002–03
Mathematics	CSR schools	-0.291	-0.337	-0.251	-0.220	-0.272
	Comparison schools	-0.237	-0.187	-0.201	-0.200	-0.269
	Difference	-0.054	-0.150	-0.050	-0.019	-0.004
Reading	CSR schools	-0.298	-0.293	-0.291	-0.334	-0.334
	Comparison schools	-0.249	-0.207	-0.254	-0.103	-0.254
	Difference	-0.048	-0.086	-0.036	-0.230	-0.081

Note: Difference = CSR – Comparison.

This gap was closed somewhat in mathematics, but not in reading. The negative signs next to the scores indicate that both groups began below the district average, and they never caught up to the district average scores in either reading or mathematics.

Although the school-level achievement scores were standardized, some analyses of student achievement were conducted using student-level data. The next series of tables provides student-level data from five districts in five states.

Student-Level Data

Student-level achievement data were collected from five districts in this study: Hickoryville, Elm County, Dodgeville, Rainfield, and Riverton (the district names are pseudonyms). The tests and years of availability varied across districts. Tables 7.5–7.9 report the average mathematics and reading scores for the CSR and comparison schools included in this study. Consistent with our observations of the school-level achievement data, in most districts, the average scores for student-level mathematics and reading achievement were observed to be lower for CSR schools than for the comparison schools. In terms of the growth, however, CSR schools seemed to have made more progress than their comparison schools. The significance of these differences will be tested later by controlling for some background variables that could be confounding the results observed in the descriptive tables.

Hickoryville

The first district, Hickoryville, is presented in Table 7.5. This table presents the results of mathematics and reading performance for students enrolled in schools implementing CSR models in this county (more descriptive information is reported in appendix Table 7.2.A). Over the course of the 5 years, although the achievement gap was narrowed, schools implementing CSR models did not experience significantly greater achievement gains than their matched comparison school counterparts in reading, in terms of the scale scores.

Table 7.5. Mathematics and reading scores for second-grade students attending sample schools in Hickoryville, State C, 2000–2001

Subject	School	2000–01	2001–02	2002–03	2003–04
Math	CSR schools	569.6	598.4	616.7	637.8
	Comparison schools	576.7	607.9	626.2	643.6
	Difference	-7.1	-9.5	-9.5	-5.7
Reading	CSR schools	572.9	600.2	623.4	635.1
	Comparison schools	583.1	608.3	632.6	641.2
	Difference	-10.2	-8.1	-9.2	-6.1

Note: Difference = CSR – Comparison; *n* = 18.

Elm County

The descriptive information about mathematics and reading scores for students in both CSR and non-CSR model schools in Elm County are featured in Table 7.6. The analyses for this population also followed students for 3 years (2001–02 to 2003–04, and traced this average for students in grades 3–5. Over the course of the 3 years of analysis, the achievement gap was reduced by over 10 points in mathematics and

over 15 points in reading (more detailed descriptive information is reported in appendix Table 7.3.A). The significance of these differences will be tested later by controlling for some background variables.

Table 7.6. Average mathematics and reading scores for students in grades 2–5 attending sample schools in Elm County, State A, 2001–02 to 2003–04

		2001–02	2002–03	2003–04
Math	CSR schools			
	Comparison schools	287.1	302.1	313.6
	Difference	312.6	323.5	327.6
		-25.5	-21.5	-14.0
Reading	CSR schools	265.7	293.4	296.8
	Comparison schools	296.1	312.3	310.3
	Difference	-30.4	-19.0	-13.5

Note: Difference = CSR – Comparison; *n* = 10.

Dodgeland

The demographic information for Dodgeland are illustrated in Table 7.7. This analysis consisted of 24 schools, and the mathematics and reading mean scores remained quite similar between the CSR and their matched comparison schools over the course of the 5 years of analysis. Although the mathematics score increased slightly by eight points, this increase may not be statistically significant. The results of significance test on these differences will be reported later by controlling for some background variables (more descriptive information is reported in appendix Table 7.4.A).

Table 7.7. Average mathematics and reading scores for students in grades 3 and 5 attending sample schools in Dodgeland, State D, 2000–2001 to 2003–04

	Year	2000	2001	2002	2003	2004
Mathematics	CSR schools	148.8	149.5	152.7	153.8	156.6
	Comparison schools	149.3	150.8	151.1	152.9	156.3
	Difference	-0.5	-1.4	1.5	0.9	0.3
Reading	CSR schools	150.6	148.9	150.0	150.2	152.4
	Comparison schools	150.1	148.6	150.1	149.4	151.8
	Difference	0.5	0.4	0.0	0.8	0.6

Note: Difference = CSR – Comparison; *n* = 24.

Rainfield

Descriptive information for Rainfield is presented in Table 7.8. The Rainfield dataset consisted of 20 pairs of schools that had implemented a model for between 2 and 7 years in 2002. The results of these analyses revealed that Rainfield schools implementing CSR models experienced slightly higher academic achievement gains than did their non-CSR model implementing matched comparison counterparts, in

terms of the scaled scores. The significance test on these differences will be conducted later by controlling for some background variables (see more descriptive information in appendix Table 7.5.A).

Table 7.8. Mathematics and reading scores for students in grade 3 attending sample schools in Rainfield, State N, 1999–2000 to 2000–2001

		1999–2000	2000–2001	2001–02
Mathematics	CSR schools	70.2	78.5	79.3
	Comparison schools	72.7	78.1	80.5
	Difference	-2.6	0.4	-1.2
Reading	CSR schools	68.6	79.9	80.3
	Comparison schools	71.6	79.6	80.7
	Difference	-3.0	0.3	-0.4

Note: Difference = CSR – Comparison; *n* = 40.

Riverton

During the baseline year, Riverton schools were slightly ahead of their comparison group counterparts in both reading and mathematics, but this difference was not very large in terms of the scale of the test score. The gap widened over the years, with students in the treatment schools outscoring students in the matched comparison schools during all 3 years of the study. This is reflected in Table 7.9. Significance tests will be described later in the chapter (see more descriptive information in appendix Table 7.6.A).

Table 7.9. Mathematics and reading scores for students in grade 3 attending sample schools in Riverton, State M, 2001–02 to 2003–04

		2001–02	2002–03	2003–04
Math	CSR schools	587.6	619.9	624.0
	Comparison schools	585.6	611.7	612.2
	Difference	2.0	8.1	11.8
Reading	CSR schools	600.9	627.5	632.8
	Comparison schools	592.9	620.9	620.8
	Difference	8.0	6.6	12.0

Note: Difference = CSR – Comparison. Students from 8 schools—4 CSR and 4 comparison schools.

Analytical Models/Methods

This section briefly explains how the data were prepared for the analyses and reviews the analytic models used to answer the research questions. Questions regarding overall analyses of student achievement were addressed using time-series models to analyze school-level academic data. Questions regarding student-level data were analyzed using both growth modeling and time-series models.

Data Preparation and Rationale: School- and Student-Level Data

The achievement analyses were conducted at both the school and student levels. First, for the school-level analyses, schools were pooled together across districts. Pooling the data allows the dataset to have a

reasonable sample size, which in turn provides power necessary to study and to detect relationships between student-level variables, such as the relationship between implementation measures and student achievement.

The student-level data from the five districts provided adequate power for the analyses to explore the difference in achievement between students in CSR and comparison schools. These data were not used to estimate the impact of school-based implementation variables, as there were very small numbers of schools were sampled from each district. Thus, the student-level achievement data were used to respond to RQ 1.

One important concern when analyzing data from several districts is that different states administer different assessments, which are not directly comparable. The ideal solution would be to conduct the analyses within the districts, and then possibly to use meta-analyses to summarize these results. This was an imperfect strategy for this study, as only a small number of schools were available in each district. Hence, although one could use this analytic approach, the study would have to compromise power as a result of a small sample size for each analysis. Moreover, for the NLECSR achievement analyses, the interest lies in exploring how CSR schools are ranked (by the district) differently from year to year relative to their comparison schools, and so it is possible to track these differences by following the changes in Z-scores.

The solution proposed in this case is a matched-pairs design to pool all schools across districts. With a matched-pairs design, it is possible to create or to compute a variable that compares the performance of CSR students to those of their matched-comparison schools within each district. This newly compiled variable computes the difference between CSR and comparison schools for each pair, which makes student-level scores more comparable across districts than the Z-score variable. This is because these newly computed differences minimize the variances between districts contributed by the various averages in Z-scores across districts. Taking the differences between the two matched groups minimizes the variances that could be incurred by using data from different districts, such as standardized tests. As the analysis for this chapter also seeks to examine the relationship between student academic achievement improvement and level of implementation of CSR models, taking the difference between these two groups also allows for the comparison of certain implementation practices, especially given that there are implementation scores available for both the treatment and the control schools. The next section describes the procedures used to rematch or re-pair the groups involved in the analyses.

Procedures for rematching or re-pairing the groups involved
The data preparation and analysis methods described in this section address and also control for some of the concerns about differences between the student groups and teaching practices. Although the schools were initially matched using percentage minority and free and reduced-price lunch variables, they were rematched using propensity scores. Matching schools using propensity scores permits the matching of the treatment and the comparison schools using a greater number of background variables. This method also allows one to compare the implementation of certain CSR-like practices, given that there are implementation scores available for both the treatment and the comparison school groups. For the school-level data, once the scores were initially matched using propensity scores, when the differences in Z-scores were used as the dependent variables, the averages and differences in school background with pairs were used as controls. For the student-level analyses, scaled scores rather than Z-scores were used because the matching of the pairs in this study occurs at the school level rather than at the student level. Thus, the pairs were maintained at the school level in the analyses, while retaining the quasi-experimental design of the study.

Methods and Models Used in the Analyses of RQ 1

RQ 1 asked the extent to which students enrolled in CSR schools improve relative to their peers in non-CSR schools. Differences in Z-scores (changes in gaps) in both mathematics and reading between CSR and comparison schools were computed and tracked for multiple years. Because the comparison schools slightly outperformed the treatment schools at the beginning of the study, a significant reduction in the gap between the two groups would indicate that the CSR students were "catching up" to their comparison group counterparts, thus implying that the implementation of CSR promotes student academic achievement.

The subquestion about the relationship between student academic achievement and the number of years of implementation of CSR in schools was analyzed by separating schools into 1 of 3 categories depending upon the number of years of implementation. The groups were divided into groups of 0–2 years, 3–5 years, and 6 or more years of implementation. Consistent with the life-cycle metaphor, schools implementing the model for 0–2 years are described as being "young." Schools implementing the model for 3–5 years are described as being "middle," and schools implementing the program for more than 5 years are described as being "old." The analyses examined which of the three groups experienced the largest gains or improvement rates in academic achievements. According to the hypothesis presented in Figure 7.1, schools implementing CSR for 3–5 years are expected to experience the largest gains. This is because student academic achievement changes are expected to initially lag behind the changes in implementation levels, but then are expected to reveal themselves more rapidly between years 3 and 5.

Methods and Models Used in the Analyses of RQ 2

Measures of individual components of CSR

RQ 2 asked the extent to which the level of implementation of specific CSR models is associated with improved student achievement. Analyses for this question addressed the relationship between improvement in student academic achievement and level of implementation of CSR using two specific measures to estimate the level of program implementation. First, we used the individual component measures, examining the relationship between the implementation level of each component and student achievement. The rationale behind these analyses was that the implementation measures of any or all of the CSR components could be either collectively or individually related to student achievement in multiple directions. It is possible that some of the components of CSR models could have an effect on student academic achievement only when implemented at either high or moderate levels, while others may have similar effects when implemented at low levels. It is also possible that for some models, low implementation of certain components could have an adverse effect upon student achievement. The individual measures approach allowed us to investigate the effects of each individual component at all levels.

Using the average of all measures

A related set of analyses addressed the relationship between the *overall* implementation of the components of CSR and student academic achievement. For the analysis of RQ 2, it is presumed that the relationship between each implementation measure and student academic achievement will vary, therefore it will be difficult to reach a general overall conclusion about the level of implementation of a CSR model and student academic achievement. With this in mind, it would still be possible to combine the multiple measures of implementation into an average, and then to produce one single factor which will serve as a predictor. This predictor could help to explain the relationship between implementation and student academic achievement.

If the analyses were to detect a combined implementation level, then this could indicate that the "comprehensiveness" of implementation of all of the components is more important than the individual effects of the various components. Comprehensiveness in this case may mean that implementing all of the components together is more important than implementing a few components at different levels.

Implementation of Specific Models and Student Academic Achievement

To prepare data for these analyses, we created dummy variables for CSR models and the interaction terms between the CSR model dummies and implementation measures in the regression analyses. The components of these newly created dummy variables explain how average academic achievement improvement varies across schools by CSR model, explained by the overall implementation measure. The coefficients of these interaction terms explain how the impact of the overall implementation measure may vary across schools by CSR model being implemented.

Basic Statistical Models for Achievement Data

The statistical models used to answer RQs 1 and 2 included value-added growth and time-series models for the individual student-level analyses, and time-series for the school-level analyses. This chapter specifically uses two-level time-series regression models, with the first level being the year (level 1 = year) and the second level being the school (level 2 = school). The models for the time series analysis are described below.

Time-series model

Time-level model:

$$\eta_{ij} = \beta_{0j} + \beta_{1j} * Year01_{ij} + \beta_{2j} * Year02_{ij} + \beta_{3j} * Year03_{ij} + \varepsilon_{ij}$$

where:

η_{ij} is the difference in Z-score between CSR school i and its paired school in year j;
β_{0j} indicates the average difference in Z-score in 1999–2000;
β_{1j} estimates the difference in the average Z-score between 1999–2000 and 2000–01;
β_{2j} estimates the difference in the average Z-score between 1999–2000 and 2001–02;
β_{3j} estimates the difference in the average Z-score between 1999–2000 and 2002–03;
$Year01_{ij}$, $Year02_{ij}$, and $Year03_{ij}$ are year dummy variables, and standardized by the grand mean and standard deviation; and
ε_{ij} is error term.

School-level model:

$$\beta_{0j} = \gamma_{00} + \gamma_{01} * ZScore99_j + \gamma_{02} * Pair\_average_j + \gamma_{03} * Pair\_difference + v_{0j}$$

where :

$$\beta_{1j} = \gamma_{10}$$

$$\beta_{2j} = \gamma_{20}$$

$$\beta_{3j} = \gamma_{30}$$

γ_{00} is the average intercept;
$ZScore99_j$ refers to two control variables generated from 1998–99 Z-score. One is the pair-average and another is the pair-difference;
γ_{10}, γ_{20}, and γ_{30} are average slopes;
The variable pair-average refers to the following 4 grand centered variables:

SchoolSize$_{ij}$ is the pair-average number of students enrolled in school *j*.
Pct_Minority$_{ij}$ is the pair-average percentage of minority students enrolled in school *j*.
Pct_Freelunch$_{ij}$ is the pair-average percentage of students eligible for free lunch in school *j*.
Student_teacher_ratio$_{ij}$ is the pair-average student–teacher ratio in school *j*.
The variable pair-difference refers to the following 4 variables:
SchoolSize_Dif$_{ij}$ is the pair-difference in the average number of students enrolled.
Pct_Minority_Dif$_{ij}$ is the pair-difference in the average percentage of minority students.
Pct_Freelunch_Dif$_{ij}$ is the pair-difference in the average percentage of students eligible for free lunch.
Student_teacher_ratio_Dif$_{ij}$ is the pair-difference in the average student–teacher ratio.
v_{0j} is a random error term representing unmeasured factors related to the intercept of the growth curve for schools *j*.

The model described above is the starting model at school level. More variables are included when school-level variables such as such as years of implementation, implementation level and CSR model, and their relationship to student achievement are examined.

Growth model

Below is the model description for students, beginning in 2nd grade in 2000–01 who are followed through 2003–04 when they were in the 5th grade:

Note: i = year, j = student and k = school

Level 1: time-level model (within student)

$$Y_{ijk} = II_{0jk} + \Pi_{1jk} * Time + e_{ijk}$$

Note: Time is coded 2000 = 0, 2001 = 1, 2002 = 2 , and 2003 = 3.

Level 2: student-level model (within school)

$$II_{0jk} = B_{00k} + B_{012k} * Gender + B_{02k} * EL + B_{03k} * Hispanic + B_{04k} * Black + B_{05k} * Otherminority + B_{06k} * Freelunch + R_{07k}$$

Note:. B_{00k} is the average yearly growth from 2000 to 2003. B_{01k} is the difference in growth rate between male and female students.

Level 3: school-level model

$$B_{00k} = \gamma_{000} + \gamma_{001} * CSR + \gamma_{002} \, Implementation + \gamma_{003} + \gamma_{003} * Implementation * CSR + \\ + \gamma_{003} * Change \, in \, implementation + \gamma_{006} * Middle + U_{0k}$$

Note: The most interesting parameters in this model are γ_{011} and γ_{012}, which measure the impact of CSR on the yearly changes in the average achievement score.

To test the association between CSR age and growth in student achievement, as hypothesized in Figure 1, the 3-year dummy variables were replaced by a time variable at the time-level model and the number of implementation years as a predictor at the school-level model was added.

The time variable has values of 0, 1, 2, and 3 to indicate academic years 2000, 2001, 2002 and 2003 respectively. Because the hypothesized relationship is similar to the developmental relationship between a human being's age and height, it is positively correlated during the early ages, and then unrelated or non-linearly related after a certain age.

The conversion of the number of implementation years as a nonlinear predictor was created by converting the error function. This function gives the probability of a variable when the value of the variable is smaller than a value, and then is equal to the integral. The distribution of the converted variable looks similar to the equation in Figure 7.1. Let x = year of implementation, and then the error distribution of implementation year is defined as follows:

$$erf(x) = 2/\sqrt{\pi} \int_0^x e^{-z^2} dz, \quad z = \frac{x - \mu}{\sigma}$$

The value of erf(x) continually increases as x increases and becomes 1 when x is larger than its mean η. By taking erf(x−3)+1, the number of years of implementation was rescaled to be smaller than 1 before the 3rd year and close to a constant after the 5th year. This transformed years of implementation mimics pattern showed in Figure 7.1. The transformed version of number of years of implementation years is presented in Table 7.10.

Table 7.10. Number of years of implementation and its conversion in error function

	0	1	2	3	4	5	6	7	>7
Year of implementation (x)	0	1	2	3	4	5	6	7	>7
Nonlinear conversion, erf(x − 3)+1	0.000	0.005	0.157	1.000	1.843	1.995	2.000	2.000	2.000

Note: The number of implementation years has a range from 0 to 14, with mean of 4.3 and a standard deviation of 2.5.

In the model, the number of implementation years and its transformation are both included in the school-level model as predictors. The former predicts a linear relationship and the latter predicts a nonlinear relationship. The nonlinear predictor is expected to be a better predictor than the linear one. If this is true then it proves that the hypothesized relationship is correct.

Findings

CSR Works When Given Time to Work

The analysis for this question began with 139 pairs of schools (matched by propensity score). Of these pairs, 115 had the required 5 years' worth of data (1999–2003), as is indicated in Table 7.1. During the baseline year, students attending CSR schools had lower academic achievement scores than the district mean scores. At the end of the 5 years of analysis, the CSR schools had closed the achievement gap in mathematics, but not in reading. This trend was bumpy and not consistent from year to year. For instance, during some years, the achievement gap either increased or remained the same between the two groups. This pattern is illustrated in Figure 7.2. CSR schools received as low as 0.05 points lower in the Z-score scales than did the comparison schools in 1999.

Figure 7.2. Average difference in Z-scores between CSR and comparison schools in mathematics and reading 1999–2003
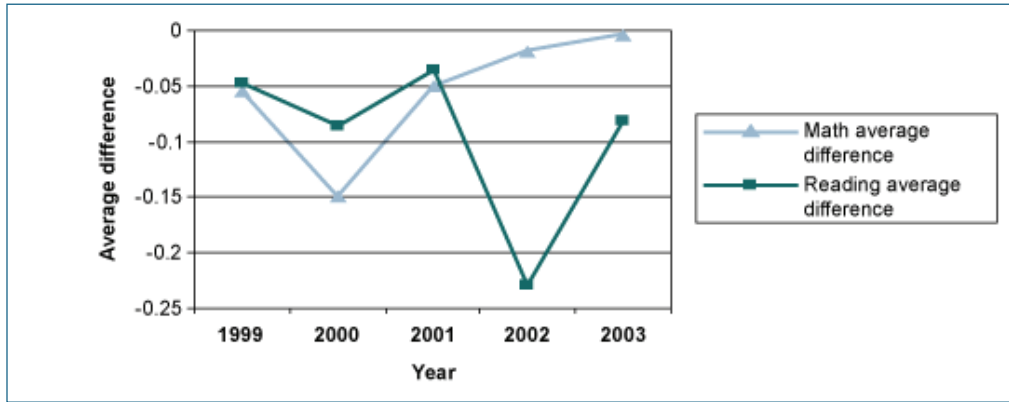
When controlling for the school background variables, the estimated change in the achievement gap is positive, which indicates that student achievement levels in some CSR model schools improved more rapidly than in comparison schools, even though overall the increase is not significantly different from zero (see results in Table 7.11 for the significance test and appendix Table 7.9.A for the estimates).

Table 7.11. Average difference of school-level mathematics and reading Z-scores by year between CSR and comparison schools

Subject	School	Change in Z-Score Gap From 1999–2000 to 2002–03	CSR Effect on Closing Gap With Controlling for 1998–1999 Z-Score and Background Variables
Math	Difference between CSR and comparison schools	0.146	0.116 (0.073)
Reading	Difference between CSR and comparison schools	0.004	0.090 (0.077)

Note: Numbers in parentheses are standard error.

A subanalysis under this research question asked whether the number of years that the model had been implemented affected student performance. Figures 7.2 and 7.3 show the change in the difference in Z-score between CSR and comparison schools separated by period of years of implementation. According to the hypothesis presented for this research question, CSR schools that have implemented CSR models for longer periods of time are expected to experience greater gains in student academic achievement than schools implementing the models for only a few years. In this study, the number of years of implementation of the CSR models reported by schools ranged from 0 to 10.

The hypothesis for this analysis was that there would be a curvilinear relationship between the number of years of implementation of CSR models and academic achievement increases. One of the major findings as a result of the analysis was that the rate of increase among the two groups was similar, which could lead one to conclude that there is a weak relationship between the number of years of implementation of a

CSR model and improvement in reading achievement. Figure 7.3 presents the average difference in Z-scores in reading from the 1999–2000 school year to the 2003–04 school year for schools implementing the CSR models by age.

Figure 7.3. Estimated difference in gap in mathematics Z-scores between CSR and comparison schools by the stage of CSR implementation, 1999–2000 to 2002–03
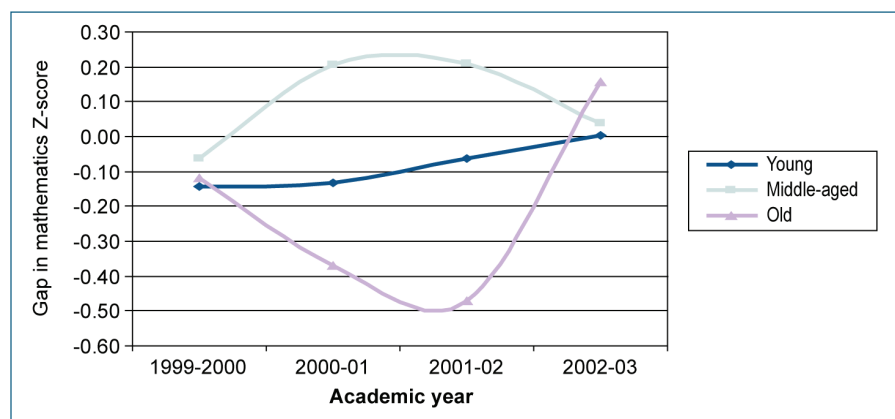
Figure 7.3 shows that schools with CSR models of "middle" age experienced the smallest achievement gaps compared to the comparison groups. During the 2000–01 to 2001–02 school years, the improvement in academic achievement for schools that had implemented CSR models for 3–5 years was higher than that of the matched comparison groups. However, after the initial gains toward the end of "middle age," the rate of improvement for CSR schools began to slow down and eventually vanished in 2002–03. This trend ended during the 5th and 6th years, which interestingly also coincided with a time when schools in middle age moved into old age. Table 7.12 reports the significance test for estimated difference in the gap between middle age and young CSR schools (see the estimates in appendix Table 7.10.A).

Table 7.12. Estimated differences in gap in the mathematics and reading Z-scores between middle stage and young stage for CSR schools, 1999–2000 to 2002–03

Difference in Year of	Mathematics in Figure 7.2		Reading in Figure 7.2	
	Estimate	SE	Estimate	SE
1999–2000	0.081	0.172	0.390**	0.177
2000–2001	0.339*	0.172	0.415**	0.177
2001–02	0.270	0.172	0.200	0.177
2002–03	0.034	0.172	0.101	0.177

Note: *p value significant at 0.1 level; **p value significant at 0.05 level; ***p value significant at 0.01 level.

Figure 7.4 reveals that CSR schools with "middle-aged" models were more successful at closing the reading achievement gap in 1999–2000 and 2001–02 (during years 3–4), which corresponds with the 1st and 2nd years of implementation for young age group. Schools in the "old age" group experienced similar trends in mathematics, as slowly lagging behind in growth compared to their comparison school counterparts and then catching up again. One explanation for this pattern could be the adoption of a new reform in the old age schools.

Figure 7.4. Estimated gap in reading Z-scores between CSR and comparison schools by stage of CSR implementation, 1999–2000 to 2002–03
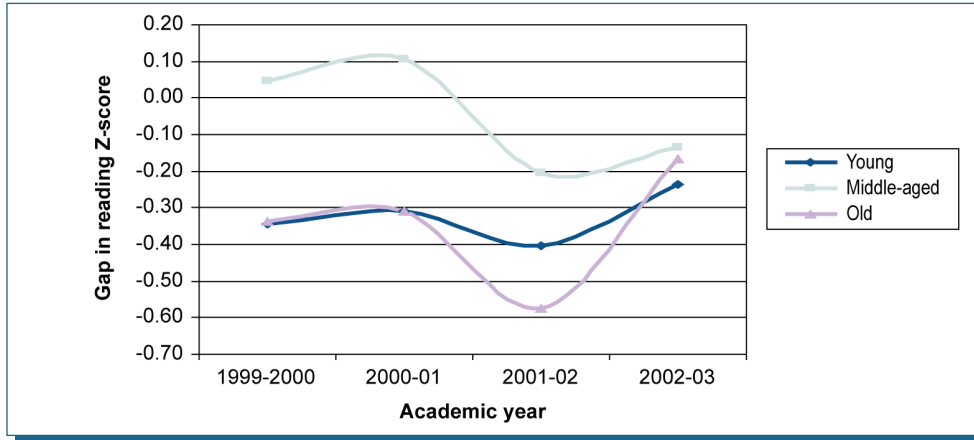
Student-Level Analyses

We next explore the existence of possible achievement differences between CSR model and non-CSR model schools at the student level. Table 7.13 reports results of growth models for three districts (see the estimates in appendix Tables 7.11.A–7.13.A). Table 7.14 reports the results of the time-series model for 2 districts (see the estimates in appendix Tables 7.14.A–7.15.A).

Table 7.13. Per-year rate of CSR school improvement in mathematics and reading, relative to comparison schools, 1999–2000 to 2003–04

Subject	Hickoryville 2000–2001 to 2003–04	Elm County 2001–02 to 2003–04	Riverton 2001–02 to 2003–04
Mathematics	-0.7 (1.6)	-0.1 (0.97)	2.2 (4.6)
Reading	-0.4 (1.3)	10.1*** (0.02)	1.2 (3.1)

Note: ***p value significant at 0.01 level.

Table 7.14. Change rate of improvement for CSR schools in mathematics and reading by year, relative to comparison schools, 1999–2000 to 2003–04

Subject	1999–2000	2000–2001	2001–02	2002–03	2003–04
Dodgeland					
Mathematics	-3.04* (0.64)	-0.39 (0.64)	1.84*** (0.57)	1.59*** (0.58)	0.66 (0.61)
Reading	-2.6* (1.68)	0.27 (0.64)	0.16 (0.57)	-0.25 (0.57)	-0.22 (0.61)
Rainfield					
Mathematics		-2.9** (1.4)	2.8*** (0.7)	1.4* (0.7)	
Reading		-2.9 (1.9)	3.1*** (0.8)	3.2*** (0.9)	

Note: *p value significant at 0.1 level; **p value significant at 0.05 level; ***p value significant at 0.01 level.

- **Hickoryville:** Over the course of the 5 years, schools implementing CSR models did not experience greater achievement gains than their matched comparison school counterparts in reading.

- **Elm County:** Over the course of the 3 years of analysis, CSR schools experienced higher/more academic achievement improvement in reading than comparison schools. This was not the case for mathematics.

- **Riverton:** Over the course of 3 years, schools implementing CSR models did not experience greater achievement gains than their matched comparison school counterparts in reading.

- **Dodgeland:** The schools implementing CSR models improved more academically in mathematics than did comparison schools, but not in reading.

- **Rainfield:** Schools implementing CSR models experienced larger academic achievement gains in both mathematics and reading than did their non-CSR model matched comparison group counterparts.

The results of student-level achievement analyses are consistent with the finding from the results of school-level achievement data. That is, some but not all CSR schools improved at a faster rate than their comparison schools. In other words, CSR schools appear, overall, to have no advantage over comparison schools in terms of achievement.

A subhypothesis of RQ 1 predicted differences in student-level scores between the CSR model schools and their matched comparison schools as a result of the number of years of CSR implementation. In Hickoryville, the findings were consistent with this predicted subhypothesis. Students attending CSR schools with "middle-aged" or "old" models performed better than their matched comparison school counterparts in the year 2001–02, but this upward trend ended during the 2003–04 school year. Close inspection of the results of the participating schools in Hickoryville reveals that 8 of the 9 schools in the study were at the old age, therefore there were no significant improvement trends in academic achievement experienced, once again, just as the hypothesis had predicted. The analysis also revealed that the relationship actually became weaker during the later years.

Table 7.15 lists the distribution of CSR schools in the five districts by their CSR age during the 2001–02 school year. It presents partial explanations for some of the variation in student academic performance in CSR schools displayed in Tables 7.13 and 7.14.

Table 7.15 reveals that if the predicted relationship between CSR age and improvement in student achievement from the school-level data is correct, in the district in which no significant CSR impact on student achievement was found, most CSR schools tended to be of old age. This is evident in districts like Hickoryville and Riverton, in which the CSR models were of old age during the 2001–02 school year. Some interesting findings in Figures 7.3 and 7.4 are that older CSR schools begin to make academic achievement gains during years 8–9 of implementation. This could certainly be the case for Rainfield, where six of the CSR schools were in the 9th year of CSR implementation in 2001–02 school year.

Table 7.15. Number of CSR schools from five districts included in student-level analyses, by year of CSR implementation, 2001–02

District	Years of Implementation								
	1	2	3	4	5	6	7	8	>8
Hickoryville					1	6	1	1	
Elm County			4	1					
Riverton		1		2		6	1		
Dodgeland			1	6		1	3	1	
Rainfield	3	2	2	1	1		5		6

CSR Works When Implemented With Fidelity

In this analysis, two additional variables were created and used to answer the research question. The first variable created was the average implementation level variable for CSR schools. This variable was created strictly for information purposes, and not for comparison. It measures the level of implementation of CSR-like activities in both treatment and control schools. The second variable created measures the difference in implementation between the CSR model schools and their comparison school counterparts in each pair. This variable measures the similarity in implementation level between the model adopting schools and their non-model-adopting counterparts in the pairs.

Table 7.16 shows the relationship between the implementation of specific components of CSR and academic achievement improvement based upon school-level data (see appendix Table 7.16.A for the results of the estimates of type of professional development on student academic achievement). Very few individual implementation components revealed a significant relationship between level and student achievement. Even the direction of the relationship was not always positive.

This means that a higher level of implementation of an individual component does not necessarily guarantee greater improvement in student achievement than in comparison schools, because some comparison schools might also be implementing CSR-like practices. When CSR schools implemented some individual components, for example parental involvement, the CSR schools experienced greater improvement in student achievement than their comparison schools. Of the two new variables created, the average improvement score was found to be better at predicting academic achievement gains in reading than in mathematics. One possible explanation for this is that there was a large number of SFA schools in the sample and their main area of focus is reading. In general, however, the relationship between the CSR level of implementation for individual components and improvement in student achievement is unclear and inconclusive.

Relationship Between Uniformity of CSR Component Implementation and Student Academic Achievement

In order to examine the overall relationship between CSR implementation and improvement in student achievement, new variables were created by taking the average of all individual implementation measures. This newly created implementation score computes the average of all of the implementation measures reported by each CSR school, and it predicts growth or gains in student achievement. When a CSR school implements some but not all components at a high level, the average implementation score is not expected to improve much. Table 7.17 reports the results of this newly created measure. Table 7.17 reveals that the average implementation measure that was created weakly predicted academic improvement in mathematics and reading.

Table 7.16. Differences in implementation levels predicting differences in mathematics and reading Z-Scores between CSR and comparison schools

	Model for Mathematics Achievement				Model for Reading Achievement			
	Model for Predicting Mathematics Score				Model for Predicting Reading Score			
	Implementation Score of CSR Schools		Difference in Implementation Score Between CSR and Comparison Schools		Implementation Score of CSR Schools		Difference in Implementation Score Between CSR and Comparison Schools	
Professional development (type)	0.11	(0.656)	0.59	(0.470)	-0.24	(0.754)	1.06*	(0.541)
Professional development (engaging)	0.11	(0.970)	0.10	(0.675)	0.09	(1.123)	0.85	(0.783)
Professional development (emphasis)	-0.13	(1.243)	0.16	(0.796)	0.78	(1.449)	0.20	(0.925)
Organization and governance	-0.82	(1.009)	-0.03	(0.761)	-0.08	(1.187)	0.09	(0.894)
Curriculum	-0.18	(1.576)	1.23	(1.200)	1.68	(1.755)	0.58	(1.334)
Pedagogy	-0.51	(0.851)	-0.38	(0.649)	-0.19	(0.992)	-0.26	(0.735)
Grouping strategies	0.85	(1.195)	-0.89	(0.929)	0.71	(1.369)	-1.18	(1.053)
Inclusive strategies	0.10	(0.515)	-0.43	(0.477)	0.53	(0.606)	-0.80	(0.554)
Scheduling	-0.31	(0.604)	-0.64	(0.465)	0.33	(0.701)	-1.20**	(0.541)
Assessment	2.94	(2.280)	0.53	(1.314)	-0.77	(2.646)	3.46**	(1.479)
Parental involvement	-0.86	(0.881)	1.97***	(0.773)	-1.35	(1.048)	2.06**	(0.919)
Technology	-0.52	(0.568)	0.55	(0.481)	-0.61	(0.668)	0.37	(0.566)

Note: Numbers in parentheses are standard errors. *p value significant at 0.1 level; **p value significant at 0.05 level; ***p value significant at 0.01 level.

One possible explanation for this weak relationship between average implementation score and achievement gains is that some schools may implement *some* CSR model components, and thus may receive scores for implementing something rather than doing nothing. It is also possible that similar levels of average implementation of components between comparison and treatment schools may have resulted from various scenarios of implementation.

To elaborate, the standard deviation of, for example, the average implementation level is significantly associated with academic achievement improvement in reading. The sign of the coefficient is positive because schools with a high average tended to have a large variation among components. However, because a large standard deviation indicates a low level of comprehensiveness or uniformity in implementation, as was expected, a low level of comprehensiveness or uniformity should be associated with an average level of implementation. The sign of the interaction term between the average level and standard deviation is negative and significant, which suggests that the level of comprehensiveness or uniformity might be inconsequential when the average implementation level is low, as is shown by the positive coefficient of comprehensive measure. When the average level of implementation level increases, the comprehensiveness of implementation becomes crucial, because a low level of comprehensiveness indicates that not all components have been implemented at the same high level, and it is difficult for a CSR school to have high fidelity. The negative coefficient of the interaction term may suggest a negative impact of lack of comprehensiveness when the average level of implementation is high. This finding brings to light the importance of comprehensiveness or uniformity. These findings are displayed in table 7.17.

Table 7.17. Relationship between the average of 2002 implementation scores and the differences in mathematics and reading Z-scores between CSR schools and comparison schools, 2000–03

	Model for Math		Model for Reading	
Intercept	-7.079*	3.789	-8.361*	4.680
Time	0.034	0.035	-0.023	0.031
Average of 2002 implementation score of CSR school	8.833*	4.970	10.333*	6.143
Average of difference in 2002 implementation score between CSR and comparison school	1.173	1.714	0.515	2.032
Standard deviation of 2002 implementation score of CSR schools	49.193	30.239	84.374**	37.382
Average of difference in standard deviation of 2002 implementation score between CSR and comparison school	1.844	2.407	0.273	2.903
Interaction: average with standard deviation of 2002 implementation score	-64.446	42.352	-108.440**	52.329
ATLAS Communities	-46.624	40.250	-28.779	49.884
Accelerated Schools Project	-6.916	5.544	-17.475**	6.857
Co-nect	-3.447	4.703	-10.628*	5.813
Other	-11.360**	4.661	-17.916***	5.761
Interaction: ATLAS with average of 2002 implementation score	63.358	54.291	38.428	67.281
Interaction: ASP with average of 2002 implementation score	9.926	7.663	24.200**	9.479
Interaction: Co-nect with average of 2002 implementation score	5.197	6.348	14.768*	7.846
Interaction: other CSR models with average of 2002 implementation score	15.648**	6.142	24.262***	7.591
Z-score difference in 1999	0.603***	0.077	0.518***	0.095
Average Z-score in 1999	-0.017	0.075	0.046	0.093
Average percentage of students who were eligible for free or reduced-price lunch	0.020	0.085	0.108	0.105
Average percentage of minority students	-0.078	0.074	-0.049	0.091
Average school size (unit per 1,000 students)	-0.092	0.084	-0.111	0.104
Average student–teacher ratio (unit of 10 students per teacher)	0.088	0.080	0.179*	0.098
Average difference in percentage of students who were eligible for free or reduced-price lunch	0.249	0.392	-0.182	0.484
Average difference in percentage of minority students	-0.612	0.413	-0.324	0.511
Average difference in school size (unit per 1,000 students)	-0.013	0.019	-0.012	0.023
Average difference in student–teacher ratio (unit of 10 students per teacher)	0.037	0.247	0.543*	0.306
Variance				
Intercept, school-level	0.235***	0.079	0.436***	0.107
Covariance	-0.017	0.030	-0.009	0.031
Year of implementation	0.053***	0.019	0.035**	0.016
Time-level	0.359***	0.035	0.333***	0.032

Note: *p value significant at 0.1 level; **p value significant at 0.05 level; ***p value significant at 0.01 level.

Relationship Between Individual CSR Models, Their Comparison Schools, and Student Academic Outcomes

Success for All/Roots and Wings stood out among our sample as demonstrating improved student achievement. Table 7.17 displays these results. In Table 7.17, SFA is the reference category.[31] Negative coefficients mean that ASP, ATLAS Communities, and Co-nect experienced smaller increases in reading scores than did the SFA model schools relative to their comparison schools. Overall, the SFA model schools showed higher implementation scores than did the comparison schools, as is depicted by the negative and significant coefficients of CSR model dummy variables. However, the positive and significant coefficient of the interaction terms between the average implementation level and CSR dummy variables reveal that the effect of implementation level was higher for predicting reading success among non-SFA schools than among SFA schools. In other words, if ASP, ATLAS Communities, and Co-nect schools implemented their models at the same levels as SFA schools, then the coefficients predicted greater gains in schools implementing these respective models than did schools implementing SFA. Thus, the relationship between implementation level and improvement in academic achievement in reading was far stronger for schools implementing ASP, ATLAS Communities, Co-nect, and other CSR models.

Conclusion

This chapter explored the relationship between CSR model implementation and student achievement by examining level of implementation, number of years of implementation, and academic achievement. The analyses yield four major conclusions.

There is no apparent difference in the performance of students in CSR schools and comparison schools.

Close examination of the data reveals that some CSR schools even experienced smaller increases in academic achievement than their comparison schools. This analysis, however, masks underlying relationships between implementation of CSR and student achievement by grouping all models together into a single hypothetical CSR effect.

However, CSR works when given time for implementation.

The relationship between CSR implementation and student achievement varied by the number of years of CSR model implementation. Schools that have implemented CSR for 3–5 years were more likely to experience statistically significant associations between implementation and achievement.

Also, CSR works when implemented with fidelity.

Our analyses further suggest a significant relationship between overall fidelity of implementation and improvement in student achievement. The analyses revealed that a high level of implementation was associated with high improvement in achievement.

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[31] This analysis is limited to four specific CSR models (and a category for others) that have enough schools within their model groups in the sample to allow for reliable estimates of model group effects.

SFA, in particular, works. Evidence suggests other models work may work as well.

Of the models specifically tested, SFA schools showed statistically significant relationships between implementation and achievement. Three models, however, displayed the potential for similar evidence, were they implemented as highly as SFA. In fact, the interaction between implementation and achievement for ASP, ATLAS Communities, and Co-nect was stronger than for SFA, suggesting that these models would see even greater student achievement gains than SFA schools if they were as highly implemented.

Chapter 8: Sustainability
James E. Taylor

Introduction

The preceding chapters have explored CSR through its initiation phase, implementation process, and relationship to student achievement and social capital. This chapter concludes our story by examining whether schools sustain or discontinue their formal affiliation with CSR model providers and, more importantly, whether schools sustain or discontinue implementation of the practices espoused by the CSR model providers with whom they worked.

Understanding the history of unsustained reform in the U.S. educational system, the architects of CSR attempted to design more complete reform models that were less easily displaced from the schools because they intervened in a coordinated way on a broad set of components of the school. As evidence of the importance CSR developers and researchers placed on sustainable reform, they cautioned at various points in the early research on CSR that CSR models needed time, often specified as a 3- or 5-year sustained period, to exhibit improvement in student achievement among other outcomes (e.g., Bodily, 1998; Slavin & Madden, 2000). Also understanding the importance of ensuring that reform efforts were sustained, the CSR legislation and regulations made it clear that the 3-year CSR grants were intended as seed money to help schools sustain reform during those 3 years and to develop a plan to make the reform self-sustaining beyond the duration of the grant (*No Child Left Behind Act*, 2002). Despite these intentions, it has become clear over the course of our work on NLECSR that one of the greatest challenges, if not the greatest challenge, to comprehensive school reformers is sustaining reform over a period long enough to produce substantial effects.

There are many ways of thinking about the end of the life cycle of CSR. We posit eight concluding scenarios to define the end of a CSR effort:

1. *Nonreform* never takes hold and ends quickly.

2. *Momentary reform* flourishes briefly but quickly dies or is overtaken by another reform.

3. *Nominal reform* establishes itself but in name only and is eventually abandoned.

4. *Resident reform* establishes itself but persists in name only.

5. *Transient reform* establishes itself, changes the system, and then passes away leaving little evidence that it ever occurred.

6. *Temporary reform* establishes itself, changes the system, but gradually gives way to the forces of inertia and persists in name only.

7. *Sustained implementation* is sustained and overtakes whatever preceded it so completely that it is institutionalized as the status quo and ceases to be "reform."

8. *Sustained implementation within a single sustained reform effort* is sustained and achieves a dynamic equilibrium, making continual adjustments to fit the needs of a continually changing environment.

These eight scenarios fit four pairs. The pairings represent key theoretical and substantive differences between pairs and minor differences within pairs. Figure 8.1 displays these pairs and the alternative life cycle trajectories they represent.

Figure 8.1. Reform trajectories
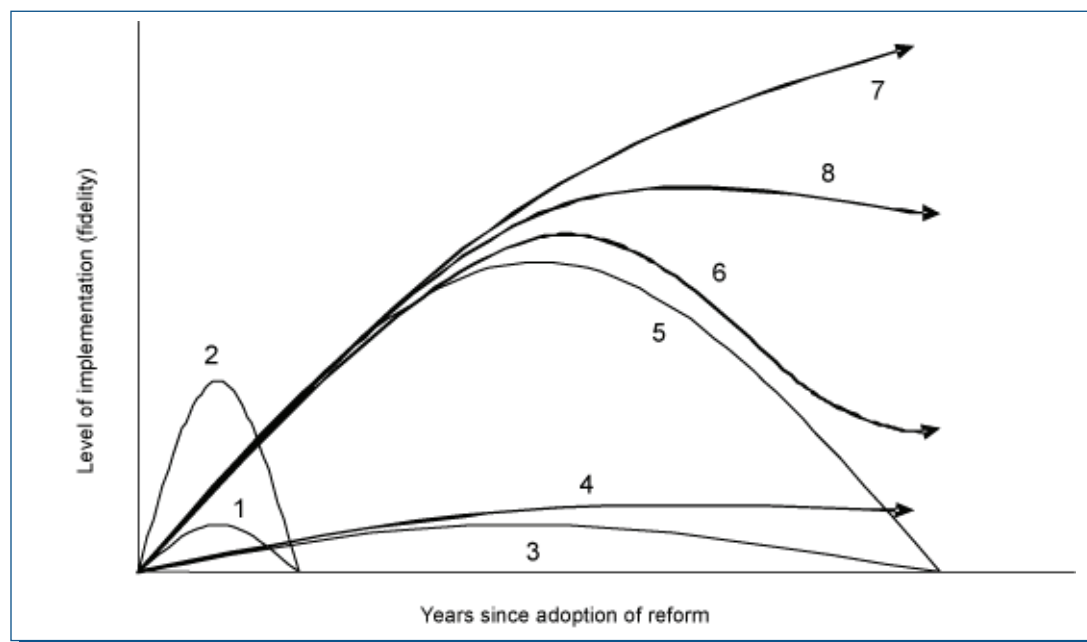
The first pair (scenarios 1 and 2) represents reform efforts that lasted only briefly (i.e., less than 3 years), whereas the remaining three pairs all require at least this minimal degree of longevity. The second pair (scenarios 3 and 4) represents superficial implementation, in which schools name their program but exhibit little evidence of the practices associated with that program. The only difference between the scenarios in this pair is whether the name of the reform effort was eventually dropped or retained. In contrast, the third pair (scenarios 5 and 6) exhibits substantial implementation of the practices related to their model at one time, but have since abandoned many or most of those practices. Finally, sustained reform is found only in the fourth pair (7 and 8), where the practices of the reform program remain clearly evident.

This final pair represents truly sustained CSR efforts, in which CSR practices persist over time. *Sustained implementation* (scenario 7) represents schools in which CSR persists over time and overtakes whatever preceded it so completely that it is institutionalized as the status quo and ceases to be "reform." *Sustained implementation within a single sustained reform effort* (scenario 8) is sustained and achieves a dynamic equilibrium, making continual adjustments to fit the needs of a continually changing environment. The distinction between the last two scenarios is subtle and will be clarified further in this chapter. The key distinction is that schools that fall into scenario 7 dissolve their formal relationship with their CSR model provider (potentially even formally adopting another model), but they sustain the practices they learned from that CSR program or model because those practices have become taken for granted, internalized, or

ingrained in the life of the school. Schools that fall into scenario 8 maintain their same formal CSR effort, but within it they take a more flexible approach to continuously improve and adapt to meet environmental demands. (Consequently, they end up with lower measures of implementation fidelity.)

The school reform literature (e.g., Tyack & Cuban, 1995) points to very few examples of scenarios 7 and 8, truly sustained reform. For illustrative purposes, Figure 8.2 displays how the schools in this study are distributed into each of these 8 scenarios.[33]

Figure 8.2. Concluding scenarios for CSR
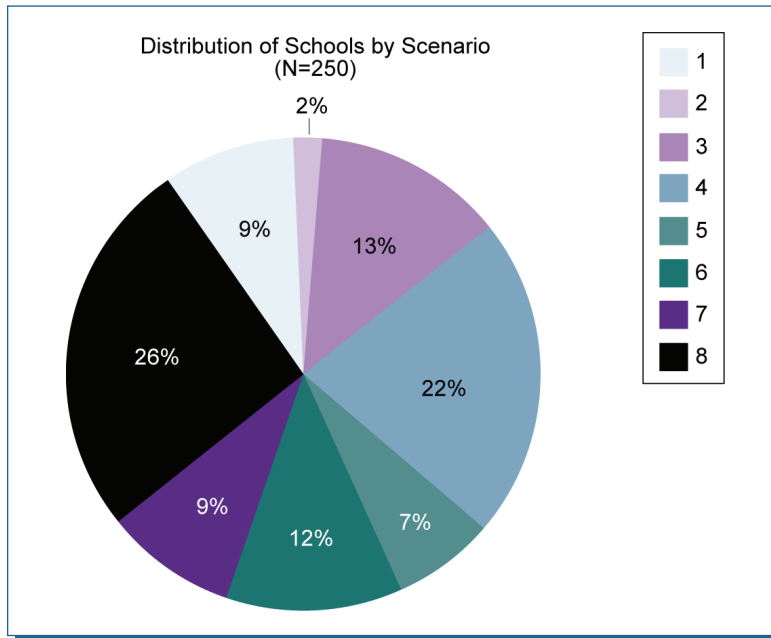
The two darkest slices on the left of the pie chart representing scenarios 7 and 8 reflect the fact that over one third of the schools in this sample managed to achieve this high level of sustainability. The remaining two thirds of the pie indicate some form of unsustained reform.

Before we proceed, it is also reasonable to attempt to define the scope of the problem of unsustained CSR relationships both in previous research and in this study. Berends, Kirby, Naftel, and McKelvey (2001) note that at least 24% of the schools in their study ended their relationship with their CSR developer. In a study of one urban district, Datnow (2001) reports that after 3 years, reforms expired in 6 of the 13 schools under study. Although a low response rate may bias results, Academic Information Management, Inc. (AIM; 2003) finds that 25% (27 of 106) of the responding schools had discontinued their original CSR model by approximately the 5th year after adoption. Evans, Baugh, Sheffer, Martin, and Scarentino (2004) find that 36% (28 of 78) of the Pennsylvania schools visited 5 years after adoption were no longer implementing the CSR model. To be clear, each of these percentage rates represents the prevalence of *unsustained reform relationships* (rather than the prevalence of *unsustained implementation of a reform,* for which no previous empirical estimates of prevalence were found).

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[33] As noted below, the analyses in this chapter draw only on treatment schools with full implementation data.

Earlier we indicated (Figure 8.2) that a third of the schools in this sample achieved sustained reform. A more fundamental question is how to define the scope of the problem of unsustained CSR relationships both in prior research and in this study. Table 8.1 illustrates the scope of the problem in this study.

Table 8.1. Number and percentage of schools that dropped or switched their relationship with a CSR model provider (summary table)

N = 395 Schools	Dropped or Switched Relationship With CSR Model		Dropped Relationship With CSR Model		Switched Relationship to Another CSR Model	
	N	%	*N*	%	*N*	%
2002–03	73	18.5	51	12.9	22	5.6
2003–04*	77	21.3	54	14.7	25	6.8
2002–03 or 2003–04	130	32.9	92	23.3	38	9.6

Note: The total number of schools is less than 395 for 2003–04 percentages because 33 schools are missing on the dropped relationship variable and 26 are missing on the switched relationship variable.

Table 8.1 shows that nearly one third of the CSR schools in our sample dropped their affiliation. Consequently, two thirds of the schools sustained their affiliation. Without any context for these data, it is difficult to understand their significance (if any). The schools that sustained their affiliation may not be implementing many of the practices espoused by the reform developer. We should, therefore, differentiate between a sustained relationship and sustained implementation.

Organization of the Chapter

For the purpose of exploring the relationship between implementation and sustainability, this chapter investigates the nature of the supporting conditions and strategies that are necessary to effectively implement and sustain CSR at the school and district levels. Although some studies may often treat discontinuation of the treatment as a nuisance rather than as the subject of research, this chapter explores the various conditions that lead to the different scenarios of sustainability and discontinuation as presented in the overview.

This chapter begins with the proposition that before one can research sustainability one must be clear about *what* is being sustained. It continues by examining the different definitions of sustainability found in the literature. The chapter then reviews the literature on sustained reform and provides a conceptual framework for examining sustained reform. Using this framework, the chapter then presents the results of two analyses that take advantage of the longitudinal quantitative data from a large sample of CSR schools. The first analysis examines whether there are certain factors that explain why schools drop or switch a model. The second analysis examines sustainability as it relates to whether schools can drop their relationship to a model provider, but continue to engage in practices that closely resemble those developed and implemented as part of their former CSR models. The chapter concludes with policy recommendations based on our findings.

Primary Research Question

This chapter primarily addresses the third NLECSR research question:

♦ RQ 3: What supporting conditions and strategies are necessary to effectively implement and sustain CSR models in schools and school districts?

Chapter-Specific Research Questions

To address this question, the chapter uses both quantitative data and analyses and qualitative case study data to answer two more specific questions:

♦ What factors are associated with a higher likelihood of schools' sustaining their relationships with CSR model providers?

♦ To what extent does model implementation cease after a school formally drops its CSR model or to what extent does it persist as a result of prior implementation?

Theoretical/Conceptual Framework

Defining What Is Sustained: Reform Affiliation or Reform Implementation

The exploration of the relationship between implementation and sustaining relationships with CSR model providers requires the definition of several key terms. Readers will remember the definition of implementation as fidelity from chapter 5 of this report. Implementation is measured here as the extent to which the CSR program is delivered to the intended recipients in the intended way. The other key definition concerns what it means to have a sustained reform effort and what distinguishes a sustained reform effort from sustained implementation of a reform:

♦ *A sustained reform relationship* is defined as the continuation of the formal relationship between a school and its external CSR model provider over a number of years.

♦ *A sustained implementation of reform* is defined as consistently high levels of fidelity of implementation of the CSR model over a number of years.

We reviewed the research literature on sustained reform as there is a wide divergence of approaches and definitions. Nonetheless, there are multiple examples of uses of both ideas—sustained reform relationships and sustained implementation—though few attempts, until now, to discriminate between the two.

Several empirical studies of CSR have confronted the fact that schools drop their formal affiliations with CSR model providers, or what we term here, *unsustained reform relationships.* For example, in a five-state study for the Southwest Educational Development Laboratory (SEDL), Academic Information Management, Inc. (AIM, 2003) examines "program continuation" measured by whether the school indicated it had discontinued its original CSR model. Similarly, Datnow (2001) uses the terms "expiration," "dropped reform model," and "abandoned reforms" to describe instances where schools did not sustain a specific formal contractual affiliation with an external CSR model provider. Importantly, she distinguishes the six schools that dropped their formal reform affiliation but may have continued working on the reform effort on their own, from two schools where respondents "never admitted to fully abandoning CES, but our observations and interviews confirm that the reform was virtually absent in practice" (p. 18). Often there seems to be an implicit (and incorrect) assumption that once these formal relationships end, so does the implementation of the practices associated with the reform.

In contrast, several conceptual pieces on CSR sustainability stress the idea of *sustained implementation of a reform* in terms of the stable use of reform-related practices over time. Datnow (2001) provides a summary of the literature that sees sustained reform as the institutionalization, or stable, taken-for-granted use, of reform-related practices where those practices become fully internalized and part of how the school does business.

> When one speaks of the sustainability of a reform, one is typically interested in knowing whether the reform lasts over time and becomes an institutionalized feature of a school. Whereas as newer studies use the term "sustainability" (e.g., Hargreaves & Fink, 2000; Yonezawa & Stringfield, 2000; Datnow, Hubbard, & Mehan, 2002; Datnow & Stringfield, 2000), earlier studies discuss "institutionalization" (e.g., Anderson & Stiegelbauer, 1994; Berman & McLaughlin, 1978; Cuban, 1986; Tyack & Tobin, 1994). Although in dictionary terms, sustainability refers to longevity and institutionalization refers to something becoming an established practice, their definitions in the research literature are inextricably connected. For a reform to be sustained, it must become institutionalized. So too, when a reform is institutionalized, it has been sustained over time. (p. 4)

Most empirical longitudinal studies of CSR implementation do not explicitly examine sustainability but in fact are based implicitly on the idea of sustained *implementation of a reform* (e.g., Berends, Kirby, Naftel, & McKelvey, 2001; Kurki & Aladjem, 2005).

We are not aware of any empirical studies that examine how dropping a reform relationship is associated with longitudinal change in the implementation of that reform. The AIM (2003) study asked schools that had discontinued their reform relationship whether they had attained high levels of implementation before dropping the reform, finding that nearly half of those schools reported having reached the stage of "institutionalization" before they dropped. If correctly understood by respondents, this would appear to indicate that implementation of many reform-based practices persisted after they dissolved their relationship with the reform developer, but no information was collected about their current level of implementation after the schools dropped the reform relationship. Another study by Evans, Baugh, Sheffer, Martin, and Scarentino (2004) measured implementation in schools that had discontinued use of their CSR model, but longitudinal data were not collected.

As with "sustained reform," "reform implementation" has had many different meanings. As discussed in chapter 5 (see also Aladjem, 2003), we measure *implementation* as fidelity: the extent to which the program or treatment of interest is delivered to the intended recipients in the intended way. The approach described in chapter 5 is based on the idea that to measure the fidelity of implementation, we should measure the levels of schools' and teachers' activities and compare those against the levels of those practices that CSR program developers report to be "full" implementation. Thus, the challenge of measuring implementation as fidelity is finding the difference between the positive, empirical reality of school life and the normative vision of CSR developers.

Sustaining CSR Models: Factors From the Literature

To understand what factors may make schools more likely to sustain their CSR efforts, we turn to the relevant literature. The key question is what makes schools likely to switch or drop their model. Prior research suggests that sustainability depends on a wide array of variables. We have organized these variables into 11 categories:

1. High local school capacity (e.g., Stringfield, 1998; Reynolds, Stringfield, Creemers, & Teddlie, in press; Florian, 2000)

2. Supportive political context (Bodilly, 1998; Yonezawa & Stringfield, 2000; Florian, 2000; Berends, Kirby, Naftel, & McKelvey, 2001; Datnow, 2001)

3. Sufficient funding (Berends, Kirby, Naftel, & McKelvey, 2001; AIM, 2003; Evans, Baugh, Sheffer, Martin, & Scarentino, 2004)

4. Positive student outcomes (Yonezawa & Stringfield, 2000; AIM, 2003)

5. Fit or alignment between the reform design and the school (Datnow & Stringfield, 2000; AIM, 2003)

6. Instructional leadership and leadership stability (Bodilly, 1998; Florian, 2000)

7. Faculty retention (Hargreaves & Fink, 2000)

8. Faculty commitment (Moffett, 2000; AIM, 2003), including factors associated with initial buy-in and the reform adoption process (Datnow, 2000)

9. Practical concrete reform specifications that are structured into the daily life of the school (Yonezawa & Stringfield, 2000; Florian, 2000)

10. Sustained professional development (Yonezawa & Stringfield, 2000; Moffett, 2000; Florian, 2000)

11. Model developer assistance (Berends, Kirby, Naftel, & McKelvey, 2001)

Research on effective schools (e.g., Stringfield, 1998; see also Datnow & Stringfield, 2000) has found that "positive outlier" schools, that is, unusually high achieving schools given their degree of social economic disadvantage, can sustain their improvement efforts over a decade or more. Unfortunately, these relatively higher capacity disadvantaged schools are less in need of reform than their lower capacity disadvantaged peers. Nevertheless, high capacity within a school is likely to be strongly related to whether schools can sustain their reform efforts. Berends, Kirby, Naftel, and McKelvey (2001) conducted "exit interviews" with 30 principals whose schools dropped their CSR model, finding that lack of funding, lack of district and state support, and dissatisfaction with the assistance from CSR model developers were the primary reasons schools dropped their affiliation with their CSR model. Yonezawa and Stringfield (2000) found that schools sustained reform when there was political support, alignment of the "cultural logic" of the reform design and that of the local reformers, and when reform was structured into the daily lives of the school community. Datnow's (2001) case studies identified the same three general factors. Datnow cites that additional sustainability factors are quite predictable and include such things as genuine interest in change, teacher and administrator support, a critical mass involved in implementation, sustained professional development, and a practical plan for implementation and monitoring of the change effort. Florian (2000) identifies five factors to which staff members in sustaining schools attribute their ability to sustain reform practices: ongoing use of reform practices, a culture of learning and innovation, support structures, leadership, and political context. Hargreaves and Fink (2000) report that succession in leadership and retention of staff also influence the continuation of instructional improvement. AIM's (2003) follow-up study of schools after their CSR funding had ended found that the most important reason for the CSR program remaining in place was successful student outcomes. Respondents reported three additional main reasons for continuation: alignment with school goals, continued funding, and strong support by teachers and administrators. In a similar postfunding, follow-up study, Evans, Baugh, Sheffer, Martin, and Scarentino (2004) found that the most frequently cited cause for discontinuation was that district mandates regarding the specific scope and sequence to be followed were incompatible with the existing CSR model; the second most cited cause was lack of funding. In summary, existing research has identified a series of plausible sustainability factors, but has not yet proven consistent linkages between these factors and sustainability.

Sustaining CSR Models: Factors From NLECSR Data

While these factors address sustainability, they do not address the phenomenon of schools' dropping CSR models per se. It is important to explore the issue of schools' dropping their models both qualitatively and

quantitatively. To gain a qualitative understanding of the reasons for which schools drop CSR models, we drew upon data from principals and teachers. These data included open-ended responses from the principal surveys as well as transcripts of structured interviews with principals and teachers. Qualitative data were used to refine the model of the factors affecting schools' decisions to sustain or drop their CSR model used as part of the quantitative analyses.[34]

Looking first at survey data, Table 8.2 presents the numbers and percentages of principals and teachers who reported each of several response options as the reason for their school's ending its CSR effort. School staff cited most frequently losing district "support," losing funding, losing faculty commitment to the reform, and reaching the end of a contract with a CSR model provider as reasons for ending a CSR effort. These factors, as well as several options that teachers frequently reported, including lack of positive student outcomes, overlap almost completely with the 11 factors derived from the literature, the sole exception being reaching the end of a contract with a CSR model provider.

Table 8.2. Reported reasons for dropping a CSR model

Reason	2002–2003 (Principal)	%	2003–2004 (Principal)	%	2003–2004 (Teacher)	%
Lost district support	20	28.99	19	31.15	256	31.84
Lost funds	15	21.74	15	24.59	n/a	n/a
Saw no benefit	6	8.70	4	6.56	n/a	n/a
Incompatible with curriculum	5	7.25	1	1.64	69	8.58
New principal	1	1.45	2	3.28	n/a	n/a
Contract ended	n/a	n/a	11	18.03	116	14.43
Lost principal support	n/a	n/a	n/a	n/a	119	14.80
Lost faculty support	n/a	n/a	n/a	n/a	166	20.65
Did not improve student learning	n/a	n/a	n/a	n/a	125	15.55
Too difficult to implement	n/a	n/a	n/a	n/a	34	4.23
New reform	n/a	n/a	n/a	n/a	118	14.68
Other	13	18.84	4	6.56	63	7.84
Multiple	9	13.04	5	8.20		
Total usable responses	69	100.00	61	100.00	804	100.00

Of the schools in the NLECSR case study sample, several had dropped their CSR model just prior to or during the data collection. Principal and teacher interviews in these schools were reviewed to analyze themes related to sustainability and to examine these schools' specific reasons for ending their reform efforts. Loss of funding and loss of district support/backing/priority for CSR emerged as the main reasons for dropping among these schools. When asked why her school had discontinued its relationship with its

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[34] One limitation of this analysis is that questions were asked only of those schools that dropped their CSR model. Consequently, we cannot assess the extent to which these factors were also present in schools that sustained their model affiliations.

CSR model and stopped using the program, one respondent made it clear that insufficient funding was at the root of her school's decision:

> I think it had to do a lot with finances. When we got rid of the literacy coordinator and the other name I can't think of, the other one um. . . [Interviewer: The design coach?] That's it. Then they got rid of those positions because we did not have the money, and you know they are cutting back, and they are talking about firing teachers and everything. I really think a lot of it had to do with money. A lot of it had to do with money.

A respondent in another school gave similar insight into what was meant by a "lack of district support:"

> My sense is that there's very little active support on at the district level . . . I think schools are pretty much left to sink or swim on their own. That's my impression. And I think, you know, the prognosis, given that, is more likely sink. If the district isn't linked up to it and, you know, trying to think about how it can deliver some extra resources, you know, all the other things we know have to happen if the place is going to succeed.

This chapter also seeks to address the extent to which implementation of a particular CSR model persists after schools formally drop or switch CSR models. Evidence from case studies suggests that dropping a CSR model does not necessarily lead to a dramatic decrease in implementation. At least some schools will exhibit sustained implementation of the practices learned during their work with their CSR model after they end their affiliation with the model provider. While it appears likely that some CSR practices may persist after they have been dropped formally, the question remains as to how strong a determinant the relationship with an external CSR model provider is to future levels of implementation. For example, when asked about the school's use of its CSR model, one teacher responded that the model was technically inactive but that some residue of the pedagogical approach was still in general use:

> I don't think we're active but we still use the tools that we learned from there. Some of the programs come and go but then that many of the teachers that go through the training, we still implement it even though we're not quote unquote a [model name] school.

In another school after the respondent did not list the CSR model among the school's main improvement strategies, she was asked whether there was a reason she did not mention CSR:

> Oh! I'm like, we have so many things . . . the [Model name] model is used. It's disappointing because we don't have it all so we only have bits and pieces of those that came in on the original, [we're] trying to teach it to the new teachers because the funds have run out so we kinda keep some things in place that we had before that don't require much funding. And that's the study groups where the teachers come and work together. So they're still doing that; that's still in place. . . .
>
> I thought it was a wonderful [model], you know, when we had the funding we had all the pieces. Right now we're working with a broken puzzle so we have a little bit of this and a little bit of that but it works so much better when you had everything in place. You had the extra support, you know, that you could lean on and then if you weren't quite ready or understood it they made you feel really comfortable and they showed you different strategies and it was really good.

Based on the relevant literature and the qualitative analysis of reports of reasons for dropping CSR model affiliations (from principals and teachers), we developed a general model of the factors related to

sustainability (both *sustained reform relationships* and *sustained implementation of a particular reform program).* Figure 8.3 depicts this model.

Figure 8.3. Sustainability logic model
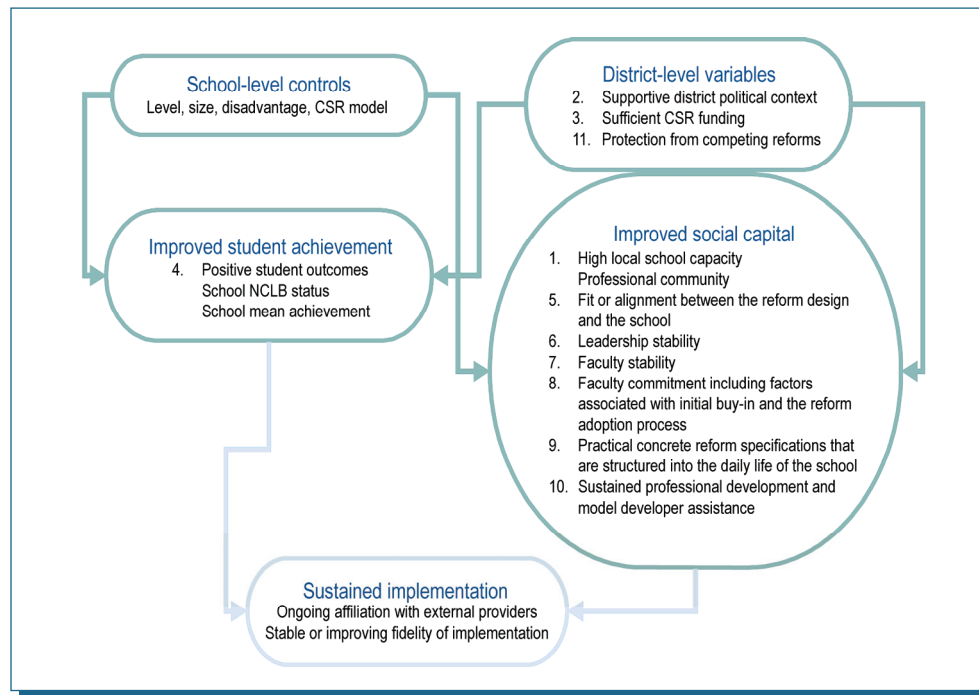
Methods/Analytical Approach

Data

The subsample of schools from which we drew data consists of 250 schools that were using a CSR model during 2002–03 or 2003–04 and for which we have full implementation data (see chapter 5). Additional data were drawn from principal and teacher surveys and principal and teacher interviews. As with the full sample, these schools are primarily urban, disadvantaged, low-performing schools. Due to the design of the study, we did not restrict our analyses to schools beginning their first year of implementation. Twenty-six percent of these schools adopted their CSR model during the first year of the study or earlier. Fifty-six percent of the schools adopted their model 3–5 years before the study began. Eighteen percent of the schools adopted more than 5 years before the study. Consequently, the majority of schools in these analyses had already sustained implementation for a number of years.

Analytical Models/Methods

We conducted two main analyses. The first was a multilevel, nonlinear model of the sustainability of reform relationships. In this model, we addressed issues concerning dropping or switching CSR affiliations. We modeled the likelihood of schools dropping or switching CSR models as a function of district and school variables, including the CSR model variable. We hypothesized that measures of 11 risk factors would be associated with a higher probability of dropping or switching CSR models the following year.

In this first analysis we fit two multilevel (schools within districts) Bernoulli logistic regression models to data on 250 schools that were affiliated with a CSR model in 2001–02, estimating schools' likelihood of

dropping their relationship with their CSR model in either of the next 2 school years. The models estimate the relationships between one district-level variable, several school-level variables, and schools' likelihood of dropping their CSR affiliation. Due to the small number of districts (21) in our study, only one or two district-level variables could be tested in each model. Several other district-level variables (e.g., frequent changes in district policy, leadership turnover, concentration of CSR schools, several forms of support) were independently tested in similar models to the one presented, with only the one presented showing a significant relationship. At the school level, the models each include independent variables that control for school characteristics, CSR program, and chronological stage of implementation, and estimate the associations between the 11 sustainability factors and schools' likelihood of dropping CSR.

Let Y_{ij} be a binary variable indicating whether school i in district j dropped or switched CSR models in the 2002–03 or 2003–04 school years. A value of 1 indicates that school i dropped or switched its CSR model. The probability model of dropping or switching CSR models can be given as:

$$prob(Yij) = \phi_{ij}$$

The nonlinear model for the odds of dropping or switching CSR models is

$$\eta_{ij} = \log[(\phi_{ij})/(1-\varphi_{ij})] = \beta_{0j} + \sum_{k=1}^{n} \beta_{kj} (xSchool\ variable)_{ij} + r_{ij}$$

Where η_{ij} is the odds of dropping or switching CSR models and β is coefficient of school variables x, for all $k = 1$ to n. The connection between the odds of dropping or switching CSR models and district variables is described in the district level model (level 2).

$$\beta_{0j} = \gamma_{00} + \gamma_{01}(District\ variable)_j + \gamma_{02}(District\ variable)_j + u_{0j}$$

$$\sum_{k=1}^{n} \beta_{kj} = \sum_{k=1}^{n} \gamma_{k0}$$

The probability can be derived as follows.

$$\varphi_{ij} = \frac{1}{1 + e^{-(\gamma_{00} + \gamma_{01}(District\ variable)_j + \gamma_{02}(District\ variable)_j + \sum_{k=1}^{n} \gamma_{k0} x_{ij} + r_{ij})}}$$

The second model was a multilevel linear model of the sustainability of implementation. This analysis measured the change in a school's implementation from before to after the school dropped its affiliation with the CSR model provider. This analysis relied on longitudinal data from the teacher survey.

The sustainability of implementation analysis fits a three-level hierarchical linear model (teachers within schools within districts) using Bernoulli logistic regression to analyze data on the same schools used in the preceding analysis (schools that were affiliated with a CSR model in 2002–03). Teacher reports of implementation provide the data for the dependent variable. The structure of the model creates a school-level slope on the dummy variable indicating the year in which the teacher reported. This slope represents the school mean implementation in 2004, adjusted for the prior level of implementation in 2002.

We estimated a three-level hierarchical linear model in which

♦ Change in level of school implementation is measured as the mean across component implementation indices and

♦ Teacher-level, school-level, and district-level variables predict the observed change.

We hypothesized that if dropping affiliation with a CSR model provider represents a critical event, then schools that dropped their affiliations will experience greater declines in their level of implementation than those that do not drop their affiliation.

$$Y_{ij} = \pi + \sum \pi * X + \beta_{0jk} + \beta_{1jk} + \sum \beta * W + \sum \gamma * Z + \varepsilon_{ijk} + r_{ij} + u_j k$$

Where:

the units of analyses are i teachers (stacked by year) nested in j schools that are nested within k districts;

Y_{ijk} is the level of implementation;

π is a set of coefficients to be estimated for teacher control variables;

X is a set of time-varying teacher control variables such as grade, subject;

β_{0jk} is the average school level of implementation across both years;

β_{1jk} is a dummy coded 1 if the year is 2003–04. The coefficient on this variable represents the change in level of school implementation from 2001–02 (prior to ending a reform relationship for all schools analyzed) to 2003–04 (after some schools have dissolved their reform relationship);

β is a set of coefficients to be estimated for school variables;

W is a set of school variables;

γ is a set of coefficients to be estimates for district variables;

Z is a set of district variables;

errors, district-level error, a school-level error u_j, and a teacher-level error ε_{ij} are assumed to be normally distributed with a mean of 0.

Measures

In the analysis of the sustainability of reform relationships, the dependent variable was a binary variable representing whether the school dropped or switched its CSR model affiliation. It was based on a principal survey item that asked the status of implementation of the model in the previous year. The school was deemed to have ended their affiliation if the principal responded either that they were no longer implementing their model or that they had dropped the prior year's model and adopted a new model.

In the sustainability of implementation analysis, the dependent variable was based on the series of measures of implementation fidelity described in chapter 5. However, in these analyses, the dependent variable was a single general index of implementation that averaged across eight separate components (e.g., governance, instruction, family involvement).

Key independent variables included a series of measures of the presence of the 11 sustainability factors identified in the literature. When a school had a lack of or low level of a sustainability factor, the school was considered to have a risk factor for dropping its reform relationship. For example, a risk factor was calculated if there was a lack of leadership stability because a new principal joined the school in 2002–03 or 2003–04 or if there was a relatively low level of social capital because the school's score on the teacher community scale was below the mean for the sample. Finally, we computed a risk factor index. This risk factor index was used to examine the influence of multiple risk factors operating simultaneously as opposed to the influence of risk factors operating independently. Although the resulting index of risk factors is only a rough estimate of the number of coincident risk factors, it generates a normal distribution of 0–9 coincident risk factors and fairly represents the idea, identified in the literature, that multiple factors needed to support sustainable reform were absent in a particular school. We also included a series of additional covariates at the school level in order to control for other factors that may be related to a school's likelihood of dropping and the level of and change in implementation.

Three limitations to the study design and data constrain the conclusions we can draw. First, these quantitative analyses reveal general relationships, but they do not fully account for the many exigencies that may play important roles in sustainability. Continued qualitative work may help us better understand this process. Second, the analyses do not differentiate between dropping a reform affiliation and switching from one CSR model to another. There may be important differences in when, why, and under what circumstances schools switch models as opposed to dropping CSR outright. Lastly, these analyses do not address sustained effects on student achievement, only sustained implementation.

Findings

Sustainability of Affiliations With CSR Model Providers

What factors were associated with a higher probability of dropping or switching CSR models? This first analysis modeled the likelihood of schools dropping or switching CSR models as a function of district and school variables, including the CSR model variable. Table 8.3 presents a schematic of the logistic regression. The two sets of columns of results differ only in that the first set treats the sustainability factors as independent from each other, and the second set omits the separate factors and, in their place, enters the risk factor index, which is a count of the number of coincident risk factors in each school.

Overall, teacher turnover is significantly related to the likelihood that a school will drop its CSR affiliation. The first column of Table 8.3 shows that districts with more serious problems with teacher turnover are more likely to have schools that drop their CSR model affiliation. In our models, unexpectedly, teacher turnover turned out to be a more important factor than district policy or district leadership turnover. This finding highlights the difficulty of sustaining a reform effort when the teachers who initially bought into the reform depart and new teachers join the school, necessitating constant training and retraining of the fundamental implementers of the reform.

The school-level estimates indicate that middle schools are less likely to drop their relationship with their CSR model developer, and schools with more district-provided professional development activities designed to support implementation of CSR are less likely to drop their affiliation. Although schools in each of the specific CSR models may have differed from each other prior to participating in the model,

Accelerated Schools Project schools were more likely to disengage from that program than schools working with "other" CSR models (the omitted category) or SFA. We did not find a consistent relationship between years since model adoption and schools' likelihood of dropping their model. In sum, when controlling for the other 10 factors, only the factors of teacher retention problems and district support through professional development exhibited significant independent associations with the likelihood of dropping a reform relationship.

In the second set of columns, referenced as the cumulative risk factors model, the 11 separate variables from the prior model have been removed from the model and replaced by a risk factors index. This risk factors index attempts to examine whether the key predictor of schools' dropping a model is the cumulative effect of multiple risk factors or the independent effect of each of the factors individually.

Table 8.3 shows that for each additional risk factor, a school was more likely to drop its affiliation with its CSR model provider. Above, there were few indications that risk factors working independently disposed a school to drop its model. Here, there is a clear indication that the set of 11 risk factors operate in combination or cumulatively to dispose schools toward ending their affiliation with their CSR model providers.

Sustainability of Implementation

Having discussed the sustainability of reform *relationships,* we will now consider the sustainability of reform *implementation.* That is, do schools continue to implement CSR-like practices over time? Table 8.4 displays the results from this analysis. The results listed in the "Intercept: implementation in 2002" section of the table show whether each factor was significantly associated with the schools' baseline levels of implementation fidelity. The estimates located under the "Slope as outcome" section explore which factors are associated with more or less gain in implementation relative to the initial baseline measurement. These estimates also address the extent to which dropping affiliation with a CSR model provider is associated with a decrease in implementation. The teacher-level covariates at the bottom of the table control for changes in the composition of the schools' faculty over the years and also reveal that reading/language arts teachers (compared to mathematics teachers) and teachers with longer tenure at the school exhibit higher levels of implementation.

The key variables of interest were the risk factor index and the indicator variable for schools that dropped their CSR model affiliation. The findings suggest that schools suffering from more risk factors began with lower implementation levels. Schools with a greater number of risk factors did not improve their implementation levels. Schools that formally dropped their models actually began with higher levels of implementation than schools that later sustained their relationships with their CSR model providers. Schools that dropped their models did also suffer a dip in their implementation levels relative to schools that maintained their CSR model affiliation. This implementation dip, however, is a rather modest 5%. In other words, schools that dropped their affiliation with their CSR model provider continued to implement their models with only 5% less fidelity than when they were formally affiliated with their CSR model provider.

The results show that disadvantaged schools and those that have been identified as low performing and in need of improvement gain more implementation fidelity relative to their more advantaged counterparts (keeping in mind that nearly all of the CSR schools in our sample are more disadvantaged and lower performing than the average school). However, schools with these characteristics began the period under study with lower levels of implementation than other schools. There is likely some element of regression to the mean and some reason to imagine a ceiling effect because the mean implementation level is fairly

high at 73%, with a maximum possible value of 100%. However, schools are fairly normally distributed on implementation, and few approach 100%.

Table 8.3. Results from two-level Bernoulli logistic regression estimating the likelihood of dropping affiliation with CSR model provider, 2002–03 or 2003–04

	Independent Factors Model			Cumulative Risk Factors Model		
	Coeff.	SE		Coeff.	SE	
Intercept	-0.641	0.179	***	-.550	0.797	**
District Degree to which teacher turnover is a problem	0.721	0.234	***			
School Has middle grades	-1.293	0.423	***	-1.227	0.401	***
School size	-0.002	0.174		-0.027	0.180	
Disadvantage index	-0.022	0.163		-0.023	0.155	
Identified for improvement	0.467	0.335		0.551	0.334	
Accelerated Schools Project	1.465	0.679	**	1.616	0.600	***
ATLAS Communities	0.769	0.798		1.181	0.718	
Co-nect	0.002	0.692		0.178	0.636	
Success for All (SFA)	-.417	0.559		-0.299	0.511	
Middle stage: 3–5 years since adoption	-.378	0.508		-0.232	0.514	
Late stage: 5 or more years since adoption	-.096	0.412		0.066	0.398	
Risk factor index	-	-		.151	0.090	*
Teacher community	-0.138	0.256				
Supportive PD for CSR	-0.326	0.161	**			
CSR grant ended in 2002–03 or 2003–04	0.503	0.452				
Change in student reading and mathematics scores 2000–2001 to 2001–02	0.163	0.157				
Applied PD in classroom instruction	-0.012	0.156				
Instructional leadership	0.112	0.244				
Principal recently joined school	0.185	0.307				
Faculty tenure	0.101	0.158				
Mandated adoption of CSR	0.001	0.326				
Implementation fidelity 2002	0.003	0.197				
Usefulness of developer's assistance	-0.195	0.191				
Many competing reform programs	-0.002	0.168				

Note: $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$.

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Table 8.4. Results from three-level slope as outcome regression for difference in implementation from 2002 to 2004

	Implementation		
Intercept	0.708	0.003	***
District Concentration of CSR schools in district	0.066	0.003	**
Intercept: implementation in 2002 School Has middle grades	-0.023	0.006	***
School size	0.001	0.002	
Disadvantage index	-0.003	0.002	
Identified for improvement	-0.007	0.005	
Accelerated Schools Project	-0.028	0.007	***
ATLAS Communities	-0.167	0.010	***
Co-nect	-0.001	0.008	
Other CSR model (SFA is the omitted category)	0.059	0.007	***
Middle stage: 3–5 years since adoption	0.009	0.007	
Late stage: 5 or more years since adoption	0.003	0.006	
Risk factor index	-0.006	0.001	***
School dropped affiliation with CSR model	0.006	0.005	
Slope as outcome: difference in implementation in 2004 adjusting for starting level in 2002 slope	0.034	0.004	***
School Has middle grades	0.010	0.008	
School size	-0.002	0.003	
Disadvantage index	0.003	0.004	
Identified for improvement	0.006	0.007	
Accelerated Schools Project	0.012	0.011	
ATLAS Communities	0.302	0.014	***
Co-nect	0.004	0.012	
Other CSR Model (SFA is the omitted category)	-0.014	0.011	
Middle stage: 3–5 years since adoption	-0.010	0.010	
Late stage: 5 or more years since adoption	-0.007	0.010	
Risk factor index	0.004	0.002	**
School dropped affiliation with CSR model	-0.012	0.008	***
Teacher Years of tenure at this school	0.006	0.002	***
Mathematics teacher	-0.022	0.003	***

	Implementation		
Teaches grades 3 and/or 4	-0.002	0.004	
Teaches grades 7 and/or 8	-0.005	0.006	
Teaches a mix of grades	-0.002	0.006	

Note: * $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$.

There is a similar finding of greater gains having begun at a lower initial level for ATLAS Communities and the "other" category of CSR models relative to SFA (which stays fairly stable over time, along with Co-nect). It must be noted that the lower initial level is likely due in part to actual differences in fidelity and in part to differing difficulties of the specific program keys (which are not controlled for as in chapter 5). Further, the different gains between the programs are due to both actual differences and some element of a ceiling effect for those programs that started with very high average levels of implementation. Schools in the middle or late phases of implementation gain less than schools in the early stage (less than 3 years after adoption).

Conclusion

One of the greatest challenges, if not the greatest challenge, to CSR is sustaining reform over a period long enough to produce substantial effects. By examining how CSRs complete their life course, this chapter highlights the importance of studying sustainability as well as the importance of being clear about what is being sustained.

♦ It is critical in future inquiry to distinguish between a sustained reform relationship and sustained implementation of a reform.

♦ Nearly one third of CSR schools in our study ended their relationships with their model developers. Of course, that means that the remaining two thirds of schools have sustained a reform relationship for more than 3 years, and in some cases more than a decade.

♦ The results of the sustainability of affiliations analysis indicates that 11 risk factors for discontinuing a reform relationship operate in combination to dispose schools toward dropping their CSR affiliation.

♦ Resolving faculty retention and providing professional development supports for the CSR effort appear to be the most significant of this interrelated set of sustainability factors. These results emphasize the critical role of teachers' knowledge, skills, and commitment as well as faculties' social capital play in sustained reform. In addition, these results situate those factors within the practical context of multiple coincident factors that collectively influence schools' ability to sustain reform.

♦ Even with some sense of the factors disposing schools toward discontinuation, it is difficult to know what to make of this rate of discontinuation by itself. Schools may be dropping their formal reform affiliation and also ceasing the implementation of the practices related to that CSR model. Alternatively, schools may be discontinuing their reform relationship because they have institutionalized the practices of the reform program and have become self-sustaining. Further, still other schools may be switching to a new reform program, selecting just a few of the practices prescribed by this CSR model to sustain and layer on top the sediment built up from their previous history of reform efforts. In sum, an analysis of schools that drop their relationships with reform developers is an incomplete analysis of the sustainability of reform.

♦ A more complete exploration of sustainability requires the examination of schools' implementation of reform-prescribed practices over several years. Our analyses show that although dropping a CSR model affiliation is significantly related to decreases (or less of an increase) in implementation fidelity, the magnitude of the effect is fairly modest, a reduction of less than 5%. Without a precipitous decline in implementation due to dropping, it is clear that many schools that formally drop their affiliation with a reform developer are still sustaining many of the practices prescribed by the CSR model developers.

These analyses do not tell us which of these schools have retained a few fragments of the reform practices, which have institutionalized the practices of their CSR model, and which have adapted and enhanced the original model in the spirit of continual school improvement, but they do make it clear that, on average, the effects of CSR models can persist beyond the formal discontinuation of the reform relationship.

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Chapter 9: Conclusion

What Can We Say About the Life Cycle?

This report began by framing our investigation of CSR within the metaphor of the life cycle. The report has traced the trajectory of schools implementing CSR, from adoption to implementation to sustainability. This chapter seeks to integrate the major findings of each of the preceding chapters.

We began work on this study at a time of tremendous policy and research interest in CSR. Now codified as Part F of Title I of the *No Child Left Behind Act* (NCLB), CSR remains of substantial policy and research salience. Few policymakers or researchers today will openly advocate the notion that school improvement will result from ad hoc, piecemeal, or fragmented reform. Almost all agree that school improvement will follow only from concentrated and systematic approaches to changing what schools and districts do. CSR has been the progenitor of a new focus on entire systems (usually school districts) as the entities required to undertake meaningful reform. In an important way, CSR has been scaled up from the school building level to the school district level. Thus, the lessons learned from studying CSR's impact and implementation at the school level are even more essential.

Distilled to their essence, the research questions we examined amounted to three questions: What works (to improve student achievement)? How does it work? In what contexts does it work? Below are our short answers.

What Works?

Success for All (SFA) improves student achievement. While we did not find similarly direct evidence for other models, we did find that were they implemented with as much fidelity, ATLAS Communities, Accelerated Schools Project, and Co-nect would improve student achievement to a greater extent than SFA. For multiple reasons, these three models were not as faithfully implemented as SFA. Our data indicate, however, that if they were, those models would appear to behave been even more successful than SFA.

Building social capital, that is, a professional learning community and a sense of collective commitment among teachers, also appears to be associated with improved student achievement. Our data show that ATLAS Communities and Accelerated Schools Project build the kinds of social capital demonstrated to have an impact on student achievement.

It is worth noting that while our quasi-experimental design allows for causal claims, one should be cautious in drawing conclusions not just from the claims made, but from the claims not made as well. Other models may work as well, but their effects may have been obscured for a variety of technical reasons.

How Does It Work?

Not surprisingly, CSR works when schools faithfully implement the model providers' design. CSR also works when given enough time. We observed no effects until years 3–5 of implementation. It is worth reiterating this point about the interplay between implementation and achievement. Even though we see substantially similar practices in non-CSR schools, we do not see the same outcomes. The outcomes of interest (student achievement and teacher social capital) appear related to the faithful implementation of specific models.

The conventional wisdom on adoption of CSR models (and other reforms as well) suggests that initial buy-in on the part of teachers prior to implementation is critical to later implementation. We saw scant evidence of such a relationship. Rather, what the data reported here suggest instead is the importance of ongoing teacher investment and ownership of the reform throughout implementation, not merely prior to launching the reform.

In What Contexts Does It Work?

Model developers' support matters, as do the actions and buy-in of principals and teachers during implementation, though not necessarily during the adoption process. We found little evidence of district context making much difference. Though the sample included almost two dozen districts, they may still be too few to detect any differences across districts.

So What?

The specific findings described briefly above and at length in the chapters lead to four lessons for practitioners, policymakers, and researchers.

♦ Institutionalization of CSR

♦ Ongoing school-level ownership/investment in reform

♦ Models matter. . .

♦ . . . Up to a point

Tyack and Cuban (1995) have written persuasively (jointly and independently) about the cycles of reform. CSR began to take shape early in the latest cycle following *A Nation at Risk.* It rose to prominence during the middle of the last decade. As such, CSR is no longer new. In many ways, it may no longer even be *reform* per se. Many aspects of CSR have become institutionalized. It is tightly woven into the fabric of life of many urban and suburban schools and districts. The warp and woof of school reform now includes CSR as a common thread upon which schools pull. We see this in the widespread implementation of CSR practices, even among schools that in name at least are not implementing a CSR model. As such, buy-in prior to implementation, oft thought of as an important a first step, turns out to be less critical than once thought. While necessary, and important, and appropriate, alone it does not lead to success, and when missing, it can be overcome.

Instead, the development and maintenance of investment in and ownership of reform, on an ongoing basis, by teachers and principals appears critical to successful, that is, faithful implementation.

It is faithful implementation of a model that we have found to be associated with positive outcomes, both student achievement and social capital (which in turn is linked to student achievement). While we see wide institutionalization of CSR, to the point that control schools appear to be "implementing" CSR with

comparable fidelity to treatment schools, we see significant and substantial differences in outcomes between CSR and non-CSR schools.

While models matter, the formal relationship between schools and model provider may not matter so much; indeed, implementation suffers relatively little when schools drop their contractual relationship with their model provider.

Though few would advocate piecemeal reform, the debate around CSR has shifted subtly but significantly since we undertook this study 6 years ago. In 2000, the pressing questions focused on the implementation and impact of externally developed CSR models, hence this study and its sister studies and the federal grant program to examine these questions. Discussions of CSR now turn as much on the components of CSR as they once did on whole models. Six years ago, there was certainly interest in CSR components. This study was designed in part to examine the optimal bundle of components. The interest in components or individual practices as opposed to entire models, however, has experienced a resurgence in recent years (reminiscent of the interest in effective schools of decades past). The fascination with the identification of promising practices gives one pause to wonder whether the current reform cycle is turning back from a whole-school orientation toward studying effective schools, away from whole-school models and towards isolated promising practices. The data from NLECSR suggest caution before adopting such an approach. Practices are important, but models matter. The unambiguous conclusion from this study is that implementation of CSR-like practices is so widespread that one is tempted to call them universal. However, important differences in student achievement growth remain between schools that faithfully implement an externally developed CSR model and those that do not explicitly implement a CSR model, though they engage in very comparable practices. Practitioners, policymakers, and researchers ought to heed this finding before the latest wave of school reform pulls us back to where we were before the rise of CSR during the last decade of the 20th century.

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Appendix A:
NLECSR Analytic Rubric

Overall Aggregate Summary

Construct	Average teacher interview rating *(only calculate if at least half of teachers have a score)*	Teacher focus group rating	Principal and coordinator average rating	TOTAL	Total possible score	Percent of total possible score
I. Understanding of Comprehensive School Reform						
Comprehensiveness						
Consistency						
Depth *(rating applies to whole school - add to school total)*						
TOTAL						
II. Perceptions of CSR						
Perceived quality						
Appropriateness						
Model-specific challenges						
TOTAL						
III. CSR Processes						
Adoption process						
Developer supports						
TOTAL						
IV. Professional Resources						
Professional community						
Principal leadership						
District leadership						
TOTAL						
Aggregate of CSR constructs (parts I, II, III)						
Sustainability comments:						
Sustainability classification:						

Understanding of CSR

School Name, District, Year:

Construct Name	Construct Description	Descriptors of Levels	Teacher Ratings								Average	Principal Rating	Other Rating	Illustrative Quotes
			T1	T2	T3	T4	T5	T6	T7	T8				Tchr FG
Comprehensiveness	This construct reflects the degree to which stakeholders perceive the breadth of CSR, or, in constrast, focus on a narrow range of components.	**4:** The teacher or principal clearly describes a range of CSR activities, including PD, parent involvement, instruction, as appropriate.												
		3: The teacher or principal describes at least one key component in detail, and demonstrates awareness of other components.												
		2: The teacher or principal describes one or two components but with thin detail.												
		1: The teacher or principal is aware of some terminology associated with the model, but is unable to provide any additional information about the model.												
		0: The teacher or principal exhibits no awareness of the CSR model or associated activities.												
Consistency	"Consistency" is related to the degree to which stakeholders perceive the reform to be implemented across the entire school (or across the relevant grades, if applicable) rather than in isolated classrooms	**4:** The interviewee clearly expresses an understanding that the reform is intended to be a schoolwide effort and provides details that substantiate this.												
		3: The interviewee's comments indicate an understanding that the reform should span more than one grade, but the commentary lacks substantive detail or the interviewee describes a process that falls somewhat short of a true schoolwide effort.												

School Name, District, Year:

Construct Name	Construct Description	Descriptors of Levels	Teacher Ratings									Principal Rating	Other Rating	Illustrative Quotes
			T1	T2	T3	T4	T5	T6	T7	T8	Average			Tchr FG
		2: The interviewee describes an implementation process that focuses on a few classrooms, engages a subset of teachers, or has resulted in divisions between faculty												
		1: The interviewee makes only the vaguest suggestion that the reform extends beyond his or her personal activities												
		0: The interviewee describes his or her implementation activities in isolation, without reference to other stakeholders.												
Depth	This is an aggregate rating for the whole school. After reading all the interviews, reflect upon the degree to which interviewees were able to convey a *complete and detailed* picture of the model and the ways in which the model has affected practice in the school. A high rating (10) would reflect a school in which the respondents were able to discuss multiple model components, adding details about instructional practice and staff development. Respondents in a school with a high rating would also use terminology consistent with the model. Pay particular attention to the precision with which the principal describes the model. Schools in which respondents used ambiguous language when describing the model would get a lower rating. Schools in which respondents exhibit almost no familiarity with the model should receive the lowest score (1). Be sure to note the evidence on which you are basing your assessment.	Aggregate "depth" rating:												

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Perceptions of CSR model

School Name, District, Year:

| Construct Name | Construct Description | Descriptors of Levels | Teacher Ratings | | | | | | | | Average | Principal Rating | Other Rating | Illustrative Quotes |
			T1	T2	T3	T4	T5	T6	T7	T8				Tchr FG
Perceived quality of the model	This general category should reflect the respondent's overall assessment of the model. (This is a catch-all category, to reflect statements such as "I think the model is wonderful" that are not necessarily supported with specific examples that enable us to measure more precise constructs.)	**4:** The interviewee expresses the belief that the model is of high quality, noting that the model reinforces best practices, helps students to learn, or is otherwise a positive element in school improvement efforts.												
		3: The interviewee is generally positive about the model, but notes some strategies that have been less effective.												
		2: The interviewee praises some aspects of the model, but is critical of others.												
		1: The interviewee is generally critical of the model, but may note one or two minor benefits of implementation.												
		0: The interviewee clearly dislikes the model and describes negative effects in the school.												
Appropriateness of model	This is intended to broadly reflect the degree to which stakeholders believe the CSR model fits his or instructional environment. It should include teachers' perceptions	**4:** Interviewee describes the model to be an excellent fit in most regards.												
		3: The interviewee expresses the opinion that the model is generally a strong fit, but may note one or two components that has do not meet the needs of the school as well.												

School Name, District, Year:

Construct Name	Construct Description	Descriptors of Levels	Teacher Ratings								Average	Principal Rating	Other Rating	Illustrative Quotes
			T1	T2	T3	T4	T5	T6	T7	T8				Tchr FG
	of the appropriateness of the model for his or her students, school needs, instructional objectives, fit with district or state standards, etc.	**2:** The interviewee perceives some components of the model to be appropriate to his/her instructional environment, but others are awkward or inappropriate.												
		1: The interviewee might note one component that fits the instructional environment, but generally notes a problematic lack of alignment between the model and the school.												
		0: The interviewee describes a difficult fit, overall.												
Challenges associated with the model	The construct reflects the degree to which stakeholders perceive the model implementation to be difficult or burdensome. The challenges may be associated with lack of specificity, etc.	**4:** The interviewee describes no challenges associated with the model												
		3: The interviewee describes minor challenges, associated with only one aspect of the model, but otherwise encountered little or no difficulties.												
		2: The interviewee describes moderate (but not insurmountable) challenges associated with the model.												
		1: The interviewee noted several very problematic aspects of the model and the implementation process.												
		0: The interviewee describes major challenges associated with the model, to the extent that implementation was severely curtailed.										4	4	

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Organization Processes and Resources

School Name, District, Year:

Construct Name	Construct Description	Descriptors of Levels	Teacher Ratings									Average	Principal Rating	Other Rating	Illustrative Quotes
			T1	T2	T3	T4	T5	T6	T7	T8					Tchr FG
Adoption process	This construct reflects the degree to which stakeholders perceive the model adoption process to be inclusive, informative, thorough, and adequate to generate buy-in.	**4:** The teacher or principal describe an adoption process that was inclusive and informative, and stakeholders had an opportunity to express their views.												
		3: The teacher or principal describes a process that was generally inclusive, but with some minor shortcomings - perhaps greater efforts should have been made to include all stakeholders - but otherwise was informative. Interviewees express only very minor reservations about the process.												
		2: The teacher or principal describes a somewhat imperfect process - including only some stakeholders, perhaps too short - but with some effort to acknowledge the importance of gaining buy-in												
		1: The teacher or principal described a process dominated by a closed circle of individuals, with little feedback from other stakeholders.												
		0: The teacher or principal describe no stakeholder involvement												
Quality of developer supports	This construct reflects the perceived quality of developer supports for reform, including	**4:** The interviewee speaks highly of developer supports, including perceived gain in knowledge and/or skills.												

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School Name, District, Year:

Construct Name	Construct Description	Descriptors of Levels	Teacher Ratings								Average	Principal Rating	Other Rating	Illustrative Quotes
			T1	T2	T3	T4	T5	T6	T7	T8				Tchr FG
	on-site activities, professional development, communication, and curricular supports.	**3:** Generally, the interviewee speaks highly of the developer supports, but notes that s/he would have changed some aspects - for example, more intensive, more hands-on, more collaborative. However, these comments do not significantly detract from an overall positive impression.												
		2: The interviewee acknowledges some benefits from developer supports, but expresses some serious reservations or disappointment.												
		1: The interviewee notes only a few positive aspects of the developer supports, and the overall impression is that the training process had many shortcomings.												
		0: The interviewee recalls little interaction with the developer, or had a negative impression of developer supports												
Quality of principal leadership	This construct reflects the degree to which the principal is perceived to be a strong and effective leader, particular with regard to support for improved instruction. A strong instructional leader is likely to be one who understands teachers' needs, is aware of instructional priorities in the school, can articulate	**4:** Teachers describe a principal who is a strong leader, supportive, and well-informed.												
		3: Overall, respondents are upbeat about the principal's instructional leadership. They may express some reservations that fall short of a full endorsement, but these do not significantly detract from their general positive assessment.												
		2: Teachers are generally lukewarm about the principal, expressing admiration for some skills, but criticizing others												

School Name, District, Year:

Construct Name	Construct Description	Descriptors of Levels	Teacher Ratings									Average	Principal Rating	Other Rating	Illustrative Quotes
			T1	T2	T3	T4	T5	T6	T7	T8					Tchr FG
	elements of content standards and mandated assessments.	**1:** Teachers are generally dubious of the principal's instructional leadership, but may offer a few positive comments that fall short of a full condemnation of the principal.													
		0: Teachers express a very low opinion of the principal, with specific examples of ineffective leadership.													
Presence of professional community to support reform	This construct reflects the degree to which the faculty engage in professionally-supportive activities, including collaboration, mentoring, communication about instructional strategies or student needs, etc. If the reform coordinator facilitates collaboration and exchange of ideas among teachers, then his or her activities may be included when assessing the quality of the professional community.	**4:** Teachers describe a professional community in which there is trust, communication, and exchange of ideas.													
		3: Interviewees describe a school with a positive professional atmosphere, yet with some minor constraints on professional interactions - for example, too little joint planning time, many new staff members, etc. They describe positive interaction with several teachers, as well as the principal, facilitator, and/or other staff.													
		2: Some teachers collaborate and express a sense of professional community, but there may be divisions within the faculty													
		1: Interviewees may describe positive professional interactions with one or two colleagues, but the general atmosphere is non-collegial and perhaps contentious.													
		0: There is little or no professional engagement or community; commentary is negative.													

School Name, District, Year:

Construct Name	Construct Description	Descriptors of Levels	Teacher Ratings										Principal Rating	Other Rating	Illustrative Quotes
			T1	T2	T3	T4	T5	T6	T7	T8	Average			Tchr FG
District leadership	This construct reflects the degree to which teachers perceive the district administration to be generally supportive of reform, or a barrier to reform.	**4:** Respondents describe the district in positive terms and can articulate specific forms of district assistance that benefit the school.												
		3: Respondents decscribe a moderately supportive district environment, with only mild concerns.												
		2: Respondents do not express strong feelings about the district leadership, either positive or negative.												
		1: Respondents' description of district environment is negative, although not an insurmountable challenge.												
		0: Respondents state in unequivocal terms that the district is a substantive barrier to reform.												

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Appendix B:
Variables and Scales

Variable Name	Measure Description	Data Source/Survey Items	Years Used	Notes
DISTRICT-LEVEL VARIABLES				
CSR Concentration	The number of CSR schools in the district divided by the total number of schools in the district	Based on data provided by common core of data (CCD) as well as responses to the following District Survey item: **How many schools in your district are implementing comprehensive school reform models?**	Mean of 2002, 2003, 2004 data	
Degree to Which Teacher Turnover Is a Problem	District Survey item	**To what extent is each of the following a problem for your district?** High rate of teacher turnover Response scale: 1 = Not a problem, 2 = Minor problem, 3 = Moderate problem, 4 = Serious problem	Mean of 2002, 2003, 2004 data	
District Community Outreach Support	Mean of District Survey items A–D	**To what extent has the district engaged in any of the following activities to familiarize community members with school reform models?** (A) The district discussed the comprehensive school reform process in a public forum prior to model selection (B) The district provides regular communication to the community about our reform efforts (through newsletters, Web site information, press releases) (C) The district makes efforts to actively involve community members in the reform process (D) The district provides information on findings from reform evaluation and monitoring in a public setting *Response scale: 1 = To a great extent, 2 = To a moderate extent, 3 = To a limited extent, 4 = Not at all*	2002, 2003, 2004	
District CSR Model Selection Support	Mean of District Survey items A–G	**What types of assistance does the district provide as schools are selecting a comprehensive school reform model?** (A) The district assists schools in conducting a formal needs assessment that will allow them to select an appropriate model (B) The district organizes "model fairs" during which schools can visit with design teams (C) The district provides travel funds for school teams to visit school reform models "in action" (D) The district provides written documentation on comprehensive school reform	2002, 2003, 2004	

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Variable Name	Measure Description	Data Source/Survey Items	Years Used	Notes
		(E) The district provides one-on-one facilitation to assist in selecting a comprehensive school reform model (F) The district requires CSR developers to provide data on design impacts in different contexts (G) The district helps schools to identify models that are aligned with district standards and assessments *Response scale: 1 = Yes, 0 = No*		
District Professional Development Support	Mean of District Survey items A–G	**Does your district do any of the following to support the professional development of teachers during the CSR implementation process?** (A) The district designates central office staff to rotate among schools to provide professional development as needed (B) The district employs staff members who are assigned to one school to provide continuous, on-site assistance (C) The district designates classroom teachers to provide information or support to their colleagues on specific innovations (D) The district has brought in external consultants to work specifically on school reform issues (E) The district encourages or requires the establishment of teacher support networks or mentoring programs (F) The district involves teachers in the development of assessments, curriculum, scoring rubrics, etc. in order to build professional capacity *Response scale: 1 = Yes, 0 = No*	2002, 2003, 2004	
District Technical Assistance Support	Mean of District Survey items A–F	**What types of technical assistance does the district provide for schools as they are beginning comprehensive school reform models?** (A) The district provides instructional leadership to teaching staff throughout the implementation of comprehensive school reform (B) The district facilitates aspects of negotiations with comprehensive school reform models (C) The district coaches principal and other staff to assist in school-model relations (D) The district negotiates with program or model developers for training and assistance	2002, 2003, 2004	

Variable Name	Measure Description	Data Source/Survey Items	Years Used	Notes
		(E) The district assists schools in securing additional resources for implementation (F) The district requires that school improvement plans focus on design implementation and assist in this process *Response scale: 1 = Yes, 0 = No*		
SCHOOL-LEVEL VARIABLES				
Accelerated Schools Project Key	Dummy variable with a value of 1 for schools whose implementation scores were calculated using the Accelerated Schools model key	Based on propensity score matching process.	2002, 2004	
Accelerated Schools Project	Dummy variable with a value of 1 for schools implementing the Accelerated Schools model	Based on responses to the following Principal Survey items: **If your school is using or has used any of the following comprehensive school reform models listed below, please check all that apply.** Accelerated Schools **If you checked more than one model, please write the name of the primary reform model in your school—that is, the one that is most central to your school's improvement efforts.**	2002	Missing CSR model data were filled in using responses to the 2003 Principal Survey item, "What model or models were you implementing last year?" or other documentary sources.
Adopted CSR Model	Dummy variable with a value of 1 for schools that were not implementing a CSR model during the 2001–02 school year (i.e. they were classified as comparison schools) but adopted a model over the course of the study	Based on response to Principal Survey item: **We understand that last year your school was not implementing a comprehensive school reform model. Is this still accurate this year?** *Response values:* *1 = Still not implementing a model* **2 = Did not have a model last year, but adopted a model this year**	2003, 2004	

Variable Name	Measure Description	Data Source/Survey Items	Years Used	Notes
Advanced Degrees	Proportion of schools' teacher respondents who possess an advanced degree	Based on responses to the following Teacher Survey items: **What degrees have you earned?** Master's degree *Response values: 1 = Yes, 0 = No* **What degrees have you earned?** Specialist degree *Response values: 1 = Yes, 0 = No* **What degrees have you earned?** Doctoral degree *Response values: 1 = Yes, 0 = No*	2002, 2004	
Applied Professional Development in Classroom Instruction	School-level average of applied professional development scale from the Teacher Survey; the scale is equal to the mean of teachers' responses to survey items A–F	Based on scale composed of the following Teacher Survey items: **What changes have you made in the following areas of your teaching practice as a result of your professional development activities in English/language arts or mathematics since September 2000?** (A) The English/language arts or mathematics curriculum content I teach (B) My expectations for the complexity of student performance tasks (C) The instructional strategies I employ (D) The types or mix of assessments I use to evaluate students (E) The instructional strategies I use with special populations (LEP, migrant) (F) The instructional strategies I use to teach classes containing students with different achievement levels *Response scale: 1 = No change, 2 = Minor change, 3 = Moderate change, 4 = Major change*	Mean of 2002, 2004	Reliability for teacher-level scale = 0.88 in 2002 and 0.87 in 2004
ATLAS	Dummy variable with a value of 1 for schools implementing the ATLAS Communities model	Based on responses to the following Principal Survey items: **If your school is using or has used any of the following comprehensive school reform models listed below, please check all that apply.** ATLAS Communities **If you checked more than one model, please write the name of the primary reform model in your school—that is, the one that is most central to your school's improvement efforts.**	2002	Missing CSR model data were filled in using responses to the 2003 Principal Survey item "What model or models were you implementing last year?" or other documentary sources.

Variable Name	Measure Description	Data Source/Survey Items	Years Used	Notes
ATLAS Key	Dummy variable with a value of 1 for schools whose implementation scores were calculated using the ATLAS Communities model key	Based on propensity score matching process	2002, 2004	
Challenging Environment Index	Mean of responses to Principal Survey items A–G	**To what extent is each of the following a problem for your school?** (A) Frequent changes in district policy and reform priorities (B) Changes in district leadership (C) Changes in school leadership (D) High rate of teacher turnover (E) Shortages of qualified teachers (F) Shortages of substitute teachers (G) Run-down school facilities *Response scale: 1 = Not a Problem, 2 = Minor Problem, 3 = Moderate Problem, 4 = Serious Problem*	2002, 2004	Reliability = 0.736914 in 2002; 0.716714 in 2003; 0.710093 in 2004
Change in Mathematics Achievement 2001–02*	Indicates whether a school made gains in mathematics achievement while using CSR in 2001–02	Difference between a school's mathematics achievement Z-score in 2002 and its mathematics achievement Z-score in 2001	2002	
Change in Reading Achievement 2001–02*	Indicates whether a school made gains in reading achievement while using CSR in 2001–02	Difference between a school's reading achievement Z-score in 2002 and its reading achievement Z-score in 2001	2002	
Change in Student Reading and Mathematics Scores 2000–2001 to 2001–02	Indicates whether a school made gains in reading and mathematics achievement while using CSR in 2001–02	Mean of the *Change in Mathematics Achievement 2001–02* and the *Change in Reading Achievement 2001–02* variables	2002	
Coach/Coordinator	Principal Survey item	**Does your school have a designated person who acts as a coordinator, facilitator, or coach for school reform?**	2002, 2003, 2004	

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Variable Name	Measure Description	Data Source/Survey Items	Years Used	Notes
		Response values: 1 = Yes, 0 = No		
Collective Commitment	School-level average of scale from Teacher Survey; scale is equal to the mean of teachers' responses to survey items A–E	Based on scale composed of the following Teacher Survey items: **Please indicate the extent to which you agree or disagree with each of the following statements.** (A) At this school, we have a common understanding of the objectives we're trying to achieve with students (B) Goals and priorities for the school are clear (C) Most teachers at this school have values and philosophies of education similar to my own (D) Most of my colleagues share my beliefs and values about what the central mission of the school s should be (E) Most of my colleagues share a focused vision for students' learning *Response scale: 1 = Strongly disagree, 2 = Disagree, 3 = Agree, 4 = Strongly agree*	2002, 2004	Reliability for teacher-level scale = .89
Professional Learning Community	School-level average of collective commitment scale from the Teacher Survey; the scale is equal to the mean of teachers' responses to survey items A–E	Based on scale composed of the following Teacher Survey items: **How frequently did you engage in each of the following activities?** (A) Planning lessons or courses with other teachers (B) Diagnosing individual students with other teachers (C) Exchanging feedback with other teachers based on classroom observations (D) Acting as a coach or mentor to other teachers or staff in your school (and receiving coaching or mentoring from other staff) (E) Participating in a learning community *Response scale: 1 = Never, 2 = A few times a year, 3 = Once or twice a month, 4 = Once or twice a week, 5 = Almost daily, 6 = Daily*	2002, 2004	Reliability for teacher-level scale = .78
Common Planning Time	Principal Survey item	**How many hours per week do teachers have for common planning time?**	2002, 2004	
Comprehensiveness of Implementation	Categorical variable indicating how many implementation indices all teachers within a school implemented at an average or above	Based on the sum of a set of 12 dummy variables (one for each implementation index) that indicate whether all of a school's teacher-level implementation scores were equal to or greater than the average of all teacher scores for that index	2002, 2004	

Variable Name	Measure Description	Data Source/Survey Items	Years Used	Notes
	average level: 1 = low implementation (4 or fewer indices implemented at average/above average level) 2 = middle implementation (5–8 indices implemented at average/above average level) 3 = high implementation (9–12 indices implemented at average/above average level)			
Comprehensiveness of Implementation of Classroom Practices	Indicates how many classroom practice indices (inclusion, curriculum, student grouping, pedagogy, and time scheduling) are implemented at an average or above average level by all teachers within a school	The sum of 5 dummy variables (which correspond to the Inclusion, Curriculum, Student Grouping, Pedagogy, and Time Scheduling implementation indices) that indicate whether all of a school's teacher-level implementation scores were equal to or greater than the average of all teacher scores for that index	2002, 2004	
Co-nect	Dummy variable with a value of 1 for schools implementing the Co-nect model	Based on responses to the following Principal Survey items: **If your school is using or has used any of the following comprehensive school reform models listed below, please check all that apply.** Co-nect **If you checked more than one model, please write the name of the primary reform model in your school—that is, the one that is most central to your school's improvement efforts.**	2002	Missing CSR model data were filled in using responses to the 2003 Principal Survey item, "What model or models were you implementing last year?" or other documentary sources.

Variable Name	Measure Description	Data Source/Survey Items	Years Used	Notes
Co-nect Key	Dummy variable with a value of 1 for schools whose implementation scores were calculated using the Co-nect model key	Based on propensity score matching process.	2002, 2004	
CSR Grant Ended in 2002–03 or 2003–04	Dummy variable equal to 1 if schools' federal CSR(D) grant ended in either 2003 or 2004	Based on data provided by the SEDL CSR Awards Database	2003, 2004	
Curriculum	School-level mean of teacher implementation scores regarding curriculum	See entry for *Teacher Implementation Score—Curriculum.*	2002, 2004	See appendix A for explanation of how implementation variables were calculated.
Disadvantage Index	Mean of proportion of students eligible for free lunch and proportion of minority students	Derived from CCD data	Mean of 2002, 2003, 2004	
Dropped Relationship With CSR Model	Dummy variable with a value of 1 for schools that ended their relationship with a CSR model developer, based on Principal Survey item	Based on response to Principal Survey item: **We understand that last year your school was implementing a comprehensive school reform model. Is this still accurate this year?** *Response values:* 1 = Still implementing the same model(s) as last year **2 = No longer implementing model(s) from last year and no replacement model(s)** 3 = Dropped last year's model and adopted a new model this year 4 = Were not implementing a model last year	2003, 2004, 2003 or 2004	
Dropped/Switched Relationship CSR Model	Dummy variable with a value of 1 for schools that ended their relationship with a CSR	Based on response to Principal Survey item: **We understand that last year your school was implementing a comprehensive school reform model. Is this still accurate this year?**	2003, 2004, 2003 or 2004	

Variable Name	Measure Description	Data Source/Survey Items	Years Used	Notes
	model developer or switched to a new CSR model	*Response values:* *1 = Still implementing the same model(s) as last year* **2 = No longer implementing model(s) from last year and no replacement model(s)** **3 = Dropped last year's model and adopted a new model this year** *4 = Were not implementing a model last year*		
Early Implementation Stage	Dummy variable with a value of 1 for schools that adopted their CSR model less than 3 years ago	Based on response to 2002 Principal Survey item: **When did you adopt the model? (Month/Year)**	2002, 2003, 2004	
ELOB	Dummy variable with a value of 1 for schools implementing the Expeditionary Learning/Outward Bound (ELOB) model	Based on responses to the following Principal Survey items: **If your school is using or has used any of the following comprehensive school reform models listed below, please check all that apply.** Expeditionary Learning/Outward Bound **If you checked more than one model, please write the name of the primary reform model in your school—that is, the one that is most central to your school's improvement efforts.**	2002	Missing CSR model data were filled in using responses to the 2003 Principal Survey item, "What model or models were you implementing last year?" or other documentary sources.
ELOB/TP	Dummy variable with a value of 1 for schools implementing either the ELOB or the Turning Points (TP) model	Based on responses to the following Principal Survey items: **If your school is using or has used any of the following comprehensive school reform models listed below, please check all that apply.** Expeditionary Learning/Outward Bound Turning Points **If you checked more than one model, please write the name of the primary reform model in your school—that is, the one that is most central to your school's improvement efforts.**	2002	Missing CSR model data were filled in using responses to the 2003 Principal Survey item, "What model or models were you implementing last year?" or other documentary sources.

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Variable Name	Measure Description	Data Source/Survey Item	Years Used	Notes
ELOB/TP Key	Dummy variable with a value of 1 for schools whose implementation scores were calculated using the ELOB/TP model key	Based on propensity score matching process	2002, 2004	
Engagement in Informal Professional Development	School-level mean of teacher implementation scores regarding engagement in informal professional development	See entry for *Teacher Implementation Score—Engagement in Informal Professional Development*	2002, 2004	See appendix A for explanation of how implementation variables were calculated.
Faculty Tenure	School-level average of teachers' years of service in the school	Based on responses to Teacher Survey item: **How many years of teaching experience do you have?** Teaching at this school *Response values: Number of years*	2002, 2004	
Comprehensiveness of Implementation	Indication of how uniformly schools are implementing the 12 CSR components represented by the implementation indices	The inverse of the standard deviation of schools' Total Implementation score	2002, 2004	
Identified for Improvement	Dummy variable with a value of 1 for schools that were identified for improvement under No Child Left Behind (NCLB)	Based on data collected from state Web sites	2003, 2004	
Implementation Stage Data Are Missing	Dummy variable with a value of 1 for schools with no implementation stage data	Based on response to 2002 Principal Survey item: **When did you adopt the model? (Month/Year)**	2002, 2003, 2004	

Variable Name	Measure Description	Data Source/Survey Items	Years Used	Notes
Inclusion	School-level mean of teacher implementation scores regarding inclusion practices	See entry for *Teacher Implementation Score—Inclusion*	2002, 2004	See appendix A for explanation of how implementation variables were calculated.
Influence of Assessments	School-level mean of teacher implementation scores regarding the influence of assessments	See entry for *Teacher Implementation Score—Influence of Assessments*	2002, 2004	See appendix A for explanation of how implementation variables were calculated.
Informal PD	School-level average of informal professional development scale from the Teacher Survey; the scale is equal to the mean of teachers' responses to survey items A–H	**Since September 2000, how frequently did you engage in each of the following activities for English/language arts or mathematics?** (A) Planning lessons or courses with other teachers (B) Diagnosing individual students with other teachers (e.g., discussing specific students and arranging appropriate help) (C) Exchanging feedback with other teachers based on classroom observations (D) Acting as a coach or mentor to other teachers or staff in your school, or receiving coaching or mentoring (E) Participating in a learning community (teacher collaboratives, networks, or study groups) (F) Using teacher resource centers as well as Internet resources to enrich your knowledge and skills (G) Participating in internships (H) Participating in a committee or task force focused on curriculum and instruction *Response scale: 1 = Never, 2 = A few times a year, 3 = Once or twice a month, 4 = Once or twice a week, 5 = Almost daily*	2002, 2004	Reliability for teacher-level scale = 0.80
Mandated Adoption of CSR	Response to Principal Survey item	**Was your school required to adopt a school reform model?** *Response values: 1 = Yes, 0 = No*	2002	

Variable Name	Measure Description	Data Source/Survey Items	Years Used	Notes
Many Competing Reform Programs	School-level mean of teacher responses to Teacher Survey item	Please indicate the degree to which you agree or disagree with the following statements. **We have so many different initiatives in this school that I can't keep track of them all.** *Response scale: 1 = Strongly disagree, 2 = Disagree, 3 = Agree, 4 = Strongly agree*	Mean of 2002, 2004	
Mathematics Achievement	Mathematics achievement Z-score to district mean	Derived from school-level achievement data provided by the districts	1999, 2000, 2001, 2002, 2003	
Mathematics Z-Score Differences Between CSR and Comparison Schools by Year	Difference between the mathematics achievement Z-score (to the district mean) of a CSR school and its matched comparison school	Derived from school-level achievement data provided by the districts	1999, 2000, 2001, 2002, 2003	
Middle Implementation Stage	Dummy variable with a value of 1 for schools that adopted their CSR model 3–5 years ago	Based on response to 2002 Principal Survey item: **When did you adopt the model? (Month/Year)**	2002, 2003, 2004	
Missed AYP	Dummy variable with a value of 1 for schools that did **not** make Adequate Yearly Progress (AYP) under NCLB	Based on data collected from state Web sites	2003, 2004	
MRSh	Dummy variable with a value of 1 for schools implementing the Modern Red Schoolhouse (MRSh) model	Based on responses to the following Principal Survey items: **If your school is using or has used any of the following comprehensive school reform models listed below, please check all that apply.** Modern Red Schoolhouse **If you checked more than one model, please write the name of the primary reform model in your school—that is, the one that is most central to your school's improvement efforts.**	2002	Missing CSR model data were filled in using responses to the 2003 Principal Survey item, "What model or models were you implementing last year?" or other documentary sources.

Variable Name	Measure Description	Data Source/Survey Items	Years Used	Notes
MRSh Key	Dummy variable with a value of 1 for schools whose implementation scores were calculated using the MRSh model key	Based on propensity score matching process.	2002, 2004	
Older Implementation Stage	Dummy variable with a value of 1 for schools that adopted their CSR model more than 5 years ago	Based on response to 2002 Principal Survey item: **When did you adopt the model? (Month/Year)**	2002, 2003, 2004	
Other CSR Model	Dummy variable with a value of 1 for schools implementing a CSR model in the study's "Other" category	Based on responses to the following Principal Survey items: **If your school is using or has used any of the following comprehensive school reform models listed below, please check all that apply.** Other (please specify) **If you checked more than one model, please write the name of the primary reform model in your school—that is, the one that is most central to your school's improvement efforts.**	2002	Missing CSR model data were filled in using responses to the 2003 Principal Survey item, "What model or models were you implementing last year?" or other documentary sources.
Parent/Community Involvement	School-level mean of teacher implementation scores regarding parent/community involvement	See entry for *Teacher Implementation Score—Parent/Community Involvement*	2002, 2004	See appendix A for explanation of how implementation variables were calculated.
Pedagogy	School-level mean of teacher implementation scores regarding pedagogy	See entry for *Teacher Implementation Score—Pedagogy*	2002, 2004	See appendix A for explanation of how implementation variables were calculated.
Percentage of ESL Students	Proportion of student population for whom English is a second language	Provided by CCD	2002, 2003, 2004	

Variable Name	Measure Description	Data Source/Survey Items	Years Used	Notes
Percentage of Minority Students	Proportion of minority (non-White) students	Provided by CCD	2002, 2003, 2004	
Percentage of Students Eligible for Free or Reduced-Price Lunch	Proportion of student population eligible for free or reduced-price lunch	**Provided by CCD**	2002, 2003, 2004	
Percentage of Teachers Who Voted in Favor of Adoption	Principal Survey item	**What was the percentage of teachers that voted in favor of the model?**	2002, 2003, 2004	
Principal Leadership	School-level average of principal leadership scale from the Teacher Survey; the scale is equal to the mean of teachers' responses to survey items A–F	Based on scale composed of the following Teacher Survey items: **Please indicate the extent to which you agree or disagree with each of the following statements. The principal in my school…** (A) Sets high standards for teaching (B) Carefully tracks students' academic progress (C) Is responsive to teachers' concerns (D) Understands how children learn (E) Makes clear to the staff his or her expectations for meeting instructional goals (F) Sets high standards for student learning *Response scale: 1 = Strongly disagree, 2 = Disagree, 3 = Agree, 4 = Strongly agree*	2002, 2004	Reliability for teacher-level scale = 0.93
Principal Recently Joined School	Dummy variable equal to 1 for schools whose principals reported having a year or less of experience at their school between 2002 and 2004	Based on the Principal Survey item: **How many years of experience have you had at this school as a principal?**	2002, 2003, 2004	
Professional Development Emphasis and Type	School-level mean of teacher implementation scores regarding the emphasis and type of professional development used	See entry for *Teacher Implementation Score—Professional Development Emphasis and Type*	2002, 2004	

Variable Name	Measure Description	Data Source/Survey Items	Years Used	Notes
Reading Achievement	Reading achievement Z-score to district mean	Derived from school-level achievement data provided by the districts	1999, 2000, 2001, 2002, 2003	
Reading Z-Score Differences Between CSR and Comparison Schools by Year	Difference between the reading achievement Z-score (to the district mean) of a CSR school and its matched comparison school	Derived from school-level achievement data provided by the districts	1999, 2000, 2001, 2002, 2003	
Risk Factor Index	Indication of the number of coincident sustainability risk factors that CSR schools reported	Sum of a set of 11 dummy variables (one for each risk factor) representing whether schools had the following specified values for these school-level variables: 1. ***Teacher community*** < mean 2. ***Supportive professional development for CSR*** < *mean* 3. ***CSR grant ended in 2002–03 or 2003–04 = 1*** 4. ***Change in student reading and mathematics scores 2000–2001 to 2001–02*** < mean 5. ***Applied professional development in classroom instruction*** < mean 6. ***Principal recently joined school = 1*** and ***Principal leadership*** < mean 7. ***Faculty tenure*** < standard deviation below mean 8. ***Mandated adoption of CSR = 1*** 9. ***Total implementation score*** < mean 10. ***Usefulness of developer's assistance*** < *mean AND* **Support for PD for CSR or Informal PD** < mean 11. ***Many competing reform programs*** > mean	2003, 2004	
School Has Middle Grades	Dummy variable that has a value of 1 for schools that include grades 6, 7, and/or 8	**Provided by CCD**	2002	
School Size	Student enrollment (unit per 1,000 students)	**Provided by CCD**	2002	

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Variable Name	Measure Description	Data Source/Survey Items	Years Used	Notes
SFA/RW	Dummy variable with a value of 1 for schools implementing the Success For All/Roots & Wings (SFA/RW) model	Based on responses to the following Principal Survey items: **If your school is using or has used any of the following comprehensive school reform models listed below, please check all that apply.** Success For All/Roots and Wings **If you checked more than one model, please write the name of the primary reform model in your school—that is, the one that is most central to your school's improvement efforts.**	2002	Missing CSR model data were filled in using responses to the 2003 Principal Survey item, "What model or models were you implementing last year?" or other documentary sources.
Shared Decision Making	School-level mean of teacher implementation scores regarding shared decision making	See entry for *Teacher Implementation Score—Shared Decision Making*	2002, 2004	See appendix A for explanation of how implementation variables were calculated.
Standard Deviation of 2002 Implementation Score	Indication of how uniformly schools are implementing the 12 CSR components represented by our implementation indices in 2002	The standard deviation of schools' Total Implementation score in 2002	2002	
Student Grouping	School-level mean of teacher implementation scores regarding student grouping	See entry for *Teacher Implementation Score—Student Grouping*	2002, 2004	See appendix A for explanation of how implementation variables were calculated.
Student–Teacher Ratio	Total number of students divided by the total number of classroom teachers	**Provided by CCD**	2002, 2003, 2004	
Support for PD for CSR	Mean of responses to Principal Survey items A, B, and C	**The following questions address whether your district did any of three items to support the professional development of teachers during the CSR implementation process.** (A) The district provided a central office staff member who provided professional development to our faculty as needed	Mean of 2003 and 2004	

Variable Name	Measure Description	Data Source/Survey Items	Years Used	Notes
		(B) The district encouraged or required our teachers to participate in teacher support networks or mentoring programs (C) The district involved teachers in the development of assessments, curriculum, scoring rubrics, etc. in order to build professional capacity *Response values: 1 = Yes, 0 = No*		
Switched Relationship to Another CSR Model	Dummy variable with a value of 1 for schools that switched to a new CSR model this year, based on Principal Survey item	Based on response to Principal Survey item: **We understand that last year your school was implementing a comprehensive school reform model. Is this still accurate this year?** *Response values:* *1= Still implementing the same model(s) as last year* *2 = No longer implementing model(s) from last year and no replacement model(s)* ***3 = Dropped last year's model and adopted a new model this year*** *4 = Were not implementing a model last year*	2003, 2004, 2003 or 2004	
Teacher Community	Average level of Collective Commitment	Average of school-level Collective Commitment scale in 2002 and 2004	Mean of 2002 and 2004	Reliability for teacher-level scale = .89
Threshold 80%	Dummy variable indicating whether 80% or less of the faculty voted for adoption of the CSR model	Based on response to Principal Survey item: **What was the percentage of teachers that voted in favor of the model?**	2002, 2003, 2004	
Threshold 90%	Dummy variable indicating whether 90% or less of the faculty voted for adoption of the CSR model	Based on response to Principal Survey item: **What was the percentage of teachers that voted in favor of the model?**	2002, 2003, 2004	
Time Scheduled for Instruction	School-level mean of teacher implementation scores regarding time scheduled for instruction	See entry for *Teacher Implementation Score—Time Scheduled for Instruction*	2002, 2004	See appendix A for explanation of how implementation variables were calculated.

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Variable Name	Measure Description	Data Source/Survey Items	Years Used	Notes
Total Implementation	Average of all school-level 12 implementation scores; it is interpreted as schools' percentage of implementation	Mean of the following school-level variables: 1. **Curriculum** 2. **Engagement in Informal Professional Development** 3. **Inclusion** 4. **Influence of Assessments** 5. **Parent/Community Involvement** 6. **Pedagogy** 7. **Professional Development Emphasis and Type** 8. **Shared Decision Making** 9. **Student Grouping** 10. **Time Scheduled for Instruction** 11. **Use of Assessments** 12. **Use of Technology in Classrooms**	2002, 2004	Variable could not be created for ELOB schools due to missing data.
Turning Points	Dummy variable with a value of 1 for schools implementing the Turning Points model	Based on responses to the following Principal Survey items: **If your school is using or has used any of the following comprehensive school reform models listed below, please check all that apply.** Turning Points **If you checked more than one model, please write the name of the primary reform model in your school—that is, the one that is most central to your school's improvement efforts.**	2002	Missing CSR model data were filled in using responses to the 2003 Principal Survey item, "What model or models were you implementing last year?" or other documentary sources.
Use of Assessments	School-level mean of teacher implementation scores regarding the use of assessments	See entry for *Teacher Implementation Score—Use of Assessments*	2002, 2004	See appendix A for explanation of how implementation variables were calculated.
Use of Technology in Classrooms	School-level mean of teacher implementation scores regarding the use of technology in classrooms	See entry for *Teacher Implementation Score—Use of Technology in Classrooms*	2002, 2004	See appendix A for explanation of how implementation variables were calculated.

Variable Name	Measure Description	Data Source/Survey Items	Years Used	Notes
Usefulness of Developer's Assistance	School-level average of developer assistance scale from the Teacher Survey; the scale is equal to the mean of teachers' responses to survey items A–G	Based on a scale composed of the following Teacher Survey items: **How useful have you found the following types of assistance provided by the model developer?** (A) Specific curriculum materials in English/language arts or mathematics (B) Critical Friends Group/Peer evaluation or support (C) Needs assessment (D) Specific timelines and milestones for where your school should be in each year of implementation (E) On-site staff from the comprehensive school reform model developer (F) Off-site assistance from the comprehensive school reform model developer (Web sites, help-line, etc.) (G) Institutes, workshops, or conferences *Response scale: 1 = Not provided by model developer, 2 = Not useful, 3 = Slightly useful, 4 = Moderately useful, 5 = Extremely useful*	2002, 2004, mean of 2002 and 2004	Reliability for teacher-level scale = 0.92
Voting	Dummy variable indicating whether or not teachers had the opportunity to vote for the adoption of their school's CSR model	Response to Principal Survey item: **Did your teachers do any of the following when your school was deciding to adopt the primary model?** (A) Vote *Response values: 1 = Yes, 0 = No*	2002, 2003, 2004	
Year of Implementation	Number of years since a school adopted its CSR model	Based on response to 2002 Principal Survey item: **When did you adopt the model? (Month/Year)**	2002, 2003, 2004	
TEACHER-LEVEL VARIABLES				
English Teacher	Dummy variable indicating whether respondent is an English teacher, based on Teacher Survey item	**What courses do you teach at this school this year?** English/language arts *Response values: 1 = Yes, 0 = No*	2002, 2004	

Variable Name	Measure Description	Data Source/Survey Items	Years Used	Notes
Mathematics Teacher	Dummy variable indicating whether respondent is a mathematics teacher, based on Teacher Survey item	**What courses do you teach at this school this year?** Mathematics *Response values: 1 = Yes, 0 = No*	2002, 2004	
New Teacher	Dummy variable indicating whether respondent has a year or less of teaching experience at this school, based on Teacher Survey item	**How many years of teaching experience do you have?** Teaching at this school *Response values: Number of years*	2002, 2004	
Teacher Implementation Score—Engagement in Informal Professional Development	Teacher implementation score regarding engagement in informal professional development	Based on the following Teacher Survey items: **Please indicate the relative emphasis placed on each of these goals/strategies within your school this year.** (A) Ensuring our teachers attend high-quality professional development activities *Response scale: 1 = No emphasis/not needed, 2 = Minor emphasis, 3 = Moderate emphasis, 4 = Major emphasis* **Since September [of last year], how frequently did you engage in each of the following activities for English/language arts or mathematics?** (A) Planning lessons or courses with other teachers (B) Diagnosing individual students with other teachers (e.g., discussing specific students and arranging appropriate help) (C) Exchanging feedback with other teachers based on classroom observations (D) Acting as a coach or mentor to other teachers or staff in your school, or receiving coaching or mentoring (E) Participating in a learning community (teacher collaboratives, networks, or study groups) (F) Using teacher resource centers as well as Internet resources to enrich your knowledge and skills (G) Participating in internships	2002, 2004	

Variable Name	Measure Description	Data Source/Survey Items	Years Used	Notes
		(H) Participating in a committee or task force focused on curriculum and instruction *Response scale: 1 = Never, 2 = A few times a year, 3 = Once or twice a month, 4 = Once or twice a week, 5 = Almost daily*		
Teacher Implementation Score—Influence of Assessments	Teacher implementation score regarding the influence of assessments	Based on the following Teacher Survey items: **In your target classroom, what influence does each of the following types of classroom assessments have on a student's final grade?** (A) Multiple-choice questions on tests (B) Essays, short-answer questions, or other writing assignments (C) Portfolio of student work (D) Group projects or presentations (E) Individual student demonstrations, exhibitions, or oral presentations *Response scale: 1 = No influence, 2 = Minor influence, 3 = Moderate influence, 4 = Major influence* **Please think about the state or district assessments in English/language arts or mathematics that are administered in your school. What influence do results from state or district assessments have on any of the following?** (A) Grouping students for English/language arts or mathematics instruction (B) Identifying areas where teachers need to strengthen their content knowledge or teaching practice in English/language arts or mathematics (C) Adjusting curriculum in areas where students encountered problems in English/language arts or mathematics (D) Identifying students for tutoring in English/language arts or mathematics (E) Identifying students to be retained at the same grade level *Response scale: 1 = No influence, 2 = Minor influence, 3 = Moderate influence, 4 = Major influence*	2002, 2004	

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Variable Name	Measure Description	Data Source/Survey Items	Years Used	Notes
Teacher Implementation Score—Shared Decision Making	Teacher implementation score regarding shared decision making	Based on the following Teacher Survey items: **Please indicate the relative emphasis placed on each of these goals/strategies within your school this year.** (A) Sharing decision-making authority among faculty, staff, and administrators *Response scale: 1 = No emphasis/not needed, 2 = Minor emphasis, 3 = Moderate emphasis, 4 = Major emphasis* **How much influence do the district, school committee, principal, and/or individual teachers have on the following decisions or activities?** (A) Selecting instructional materials (B) Selecting topics and skills to be taught (C) Selecting teaching techniques (D) Creating student ability groups or instruction in each classroom (E) Allocating instructional time for each academic subject *Response scale: 1 = Mostly a district decision, 2 = Mostly a school decision, 3 = Evenly-shared district–school responsibility, 4 = Mostly a classroom teacher responsibility* **Since September [of last year], how frequently did you engage in each of the following activities for English/language arts or mathematics?** (A) Participating in a learning community (teacher collaboratives, networks, or study groups) (B) Participating in a committee or task force focused on curriculum and instruction *Response scale: 1 = Never, 2 = A few times a year, 3 = Once or twice a month, 4 = Once or twice a week, 5 = Almost daily*	2002, 2004	
Teacher Implementation Score—Use of Technology in Classrooms	Teacher implementation score regarding the use of technology in classrooms	Based on the following Teacher Survey items: **During instruction, how frequently do your students in your target English/language arts or mathematics class use computers to do the following?** (A) Use computer applications such as word processing, spreadsheets, etc. (B) Practice drills	2002, 2004	

Variable Name	Measure Description	Data Source/Survey Items	Years Used	Notes
		(C) Research using the Internet and/or CD–ROM (D) Take assessments *Response scale: 1 = Never, 2 = Once or twice a semester, 3 = Once or twice a month, 4 = Once or twice a week, 5 = Almost daily*		
Teacher Implementation Score—Curriculum	Teacher implementation score regarding curriculum	Based on the following Teacher Survey items: ***From the Mathematics Teacher Survey:*** **This year, what emphasis did you place on the following topics in your target mathematics class?** (A) Whole numbers (B) Fractions (C) Decimals (D) Percent (E) Ratio/Proportions (F) Measurement (G) Pre-algebra (H) Algebra (I) Geometry Response scale: 1 = No emphasis, 2 = Minor emphasis, 3 = Moderate emphasis, 4 = Major emphasis ***From the English/Language Arts Teacher Survey:*** **This year, what emphasis did you place on the following topics in your target English/language arts class?** (A) Vocabulary development (B) Reading comprehension (C) Writing development (D) Textual features (E) Literature—fiction (F) Literature—nonfiction (G) Information/study skills (H) Communication skills Response scale: 1 = No emphasis, 2 = Minor emphasis, 3 = Moderate emphasis, 4 = Major emphasis	2002, 2004	

Variable Name	Measure Description	Data Source/Survey Items	Years Used	Notes
Teacher Implementation Score—Inclusion	Teacher implementation score regarding inclusion practices	Based on the following Teacher Survey items: **What statement best characterizes the books, materials, or resources you use with LEP or ESOL students who are a part of your target English/language arts class?** 1. LEP or ESOL students use the same materials as general education students 2. Books, materials, and resources are written in the native language of the LEP or ESOL students 3. Books, materials, and resources are tailored to the instructional level of the LEP or ESOL students 4. LEP or ESOL specialists work with students *Response values: 1 = Yes, 0 = No* **Which statement best characterizes the books, materials, or resources you use with students with disabilities (who have current IEPs) who are a part of your target English/language arts or mathematics class?** 1. Students with disabilities use the same books, materials, and resources (without adaptations) as do general education students 2. Students with disabilities use books, materials, and resources that are <u>adapted</u> for their special needs, but with the same curricular content as general education students 3. Students with disabilities use books, materials, and resources that are <u>adapted</u> for their special needs, with <u>different curricular content</u> 4. Specialists work with students with disabilities *Response values: 1 = Yes, 0 = No*	2002, 2004	
Teacher Implementation Score— Parent/Community Involvement	Teacher implementation score regarding parent/community involvement	Based on the following Teacher Survey items: **If your school offers any of the following, please indicate how many of your students' parents participate?** (A) Teacher–parent conferences (B) Sign daily activity sheet for completion of homework (C) Home visits from teacher or other staff (D) Science fairs, math nights, or other academic activity for students and parents	2002, 2004	

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Variable Name	Measure Description	Data Source/Survey Items	Years Used	Notes
		(E) Develop written agreements between the school and parents that describe what each will do to help students succeed (F) E-mail/phone call communication *Response scale: 1 = Just a few parents, 2 = About a quarter of parents, 3 = About half of parents, 4 = Most parents* **How often do you communicate information to the parents of your students in the following ways?** (A) Inform parents about learning objectives in core academic subjects (B) Contact parents when their child is encountering academic problems (C) Assign homework or provide activities that require children to interact with parents *Response scale: 1 = Never, 2 = A few times a year, 3 = Once or twice a month, 4 = Once or twice a week, 5 = Almost daily*		
Teacher Implementation Score—Pedagogy	Teacher implementation score regarding pedagogy	Based on the following Teacher Survey items: *From the Mathematics Teacher Survey:* **This year, how often did students in your target mathematics class do the following?** (A) Listen to me present the definition of a term or the steps of a procedure (B) Perform tasks requiring methods or ideas already introduced to students (C) Assess a problem and choose a method to use from those already introduced to students (D) Perform tasks requiring methods or ideas not already introduced to students (E) Explain an answer or solution method for a particular problem (F) Analyze similarities and differences among representations, solutions, or methods (G) Prove that a solution is valid or that a method works for all similar cases (H) Work on math problems that have multiple answers or solution methods (I) Discuss math ideas, problems, solutions, or methods in small groups or pairs	2002, 2004	

Variable Name	Measure Description	Data Source/Survey Items	Years Used	Notes
		(J) Work on math textbook, worksheet, or board work exercises for practice or review (K) Write extended explanations or math ideas, solutions, or methods (L) Work on a math investigation, problem, or project for several days Response scale: 1 = Never, 2 = About once or twice a semester, 3 = About once or twice a month, 4 = About once or twice a week, 5 = Almost every day *From the English/Language Arts Teacher Survey:* **This year, how often did students in your target English/language arts class do the following?** (M) Listen to me give a formal presentation of definitions or concepts (N) Write brief answers to questions about something they have read (O) Work on a written product or report for several days (P) Make predictions about what they are reading as they are reading it (Q) Explain, support, or justify their understanding of what they have read (R) Work in a reading workbook or on a worksheet (S) Take a written quiz or test about what they have read Response scale: 1 = Never, 2 = About once or twice a semester, 3 = About once or twice a month, 4 = About once or twice a week, 5 = Almost every day		
Teacher Implementation Score—Professional Development Emphasis and Type	Teacher implementation score regarding the emphasis and type of professional development used	Based on the following Teacher Survey items: **Teachers may participate in professional development activities alone or with groups of teachers from their school. Since September [of last year], how often did you participate in professional development activities in the following ways?** (A) I participated in professional development with most or all of the teachers in my school (B) I participated in professional development with most or all of the teachers in my department or grade level *Response scale: 1 = Never, 2 = Rarely, 3 = Sometimes, 4 = Often*	2002, 2004	

Variable Name	Measure Description	Data Source/Survey Items	Years Used	Notes
		Thinking again about all of your professional development activities since September [of last year], how often did the following occur? (A) Participants observed demonstrations of teaching techniques (B) Participants practiced what they learned and received feedback (C) Participants led group discussions (D) Participants conducted a demonstration of a lesson, unit, or skill (E) Participants developed and practiced using student materials (F) Participants reviewed student work or scored assessments *Response scale: 1 = Never, 2 = Rarely, 3 = Sometimes, 4 = Often* **What changes have you made in the following areas of your teaching practice as a result of your professional development activities since September [of last year]?** (A) The types or mix of assessments I use to evaluate students *Response scale: 1 = No change, 2 = Minor change, 3 = Moderate change, 4 = Major change*		
		How much emphasis did your professional development activities place on the following topics? (A) State or district content standards in English/language arts or mathematics (B) Curriculum associated with a specific English/language arts or mathematics program (C) Student assessment techniques in English/language arts or mathematics (D) Instructional strategies for non-native English speaking students (E) Instructional strategies for special education students (F) Instructional strategies for low-achieving students (G) Using student work to think about changing instruction or curricula (H) Using drills, memorization, or other skills-based activities (I) Using long-term projects or reports (J) Relating lessons to the real world (K) Using cooperative learning techniques (L) Technology		

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Variable Name	Measure Description	Data Source/Survey Items	Years Used	Notes
		(M) Classroom management (N) School management or governance (O) Data-based decision making *Response scale: 1 = No influence, 2 = Minor influence, 3 = Moderate influence, 4 = Major influence*		
Teacher Implementation Score—Student Grouping	Teacher implementation score regarding student grouping	Based on the following Teacher Survey items: **When teaching, how often do you use the following approaches to group students for instruction in your target English/language arts or mathematics class?** (A) Similar ability or achievement level (B) Mixed ability or achievement level *Response scale: 1 = Never, 2 = Rarely, 3 = Sometimes, 4 = Often* **How frequently are student grouping patterns reevaluated within your target English/language arts or mathematics class?** *Response scale:* *1 = About once a week* *2 = About once a month* *3 = Every 2 months* *4 = Every semester* *5 = Students mostly remain with the same group all year* *6 = As necessary, not on a regular basis*	2002, 2004	
Teacher Implementation Score—Time Scheduled for Instruction	Teacher implementation score regarding time scheduled for instruction	Based on the following Teacher Survey items: **How often do children in your class(es) usually work on lessons or projects in the following general topic areas, whether as a whole class, in small groups, or in individualized arrangements?** (A) English and language arts (B) Mathematics (C) Social studies (D) Science *Response scale: 1 = Never, 2 = Less than once a week, 3 = 1–2 times a week, 4 = 3–4 times a week, 5 = Daily*	2002, 2004	

Variable Name	Measure Description	Data Source/Survey Items	Years Used	Notes
		How much time do children in your class(es) usually work on lessons or projects in the following general topic areas, whether as a whole class, in small groups, or in individualized arrangements? (A) English and language arts (B) Mathematics (C) Social Studies (D) Science *Response scale: 1 = Less than 40 minutes a session, 2 = 40–55 minutes a session, 3 = 56–70 minutes a session, 4 = More than 70 minutes a session*		
Teacher Implementation Score—Use of Assessments	Teacher implementation score regarding the use of assessments	Based on the following Teacher Survey items: **How strongly do you agree or disagree with the following statements about classroom assessments in your target English/language arts or mathematics class?** (A) Classroom assessments are continuous and explicitly linked to subject matter taught (B) Students are provided with a rubric or guidelines that explain how assessment tasks will be evaluated (C) Assessments which I personally develop are a significant part of my instruction (D) Assessments from external sources are a significant part of my instruction *Response scale: 1 = Strongly disagree, 2 = Disagree, 3 = Agree, 4 = Strongly agree*	2002, 2004	
Teaches a Mix of Grades	Dummy variable indicating whether respondent teaches several grades, based on Teacher Survey item	**What grade levels do you teach at this school this year?** 3rd grade 4th grade 5th grade 6th grade 7th grade 8th grade *Response values: 1 = Yes, 0 = No*	2002, 2004	

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Variable Name	Measure Description	Data Source/Survey Items	Years Used	Notes
Teaches Grade 3 and/or 4	Dummy variable indicating whether respondent teaches grades 3 and/or 4, based on Teacher Survey item	**What grade levels do you teach at this school this year?** 3rd grade 4th grade *Response values: 1 = Yes, 0 = No*	2002, 2004	
Teaches Grade 7 and/or 8	Dummy variable indicating whether respondent teaches grades 7 and/or 8, based on Teacher Survey item	**What grade levels do you teach at this school this year?** 7th grade 8th grade *Response values: 1 = Yes, 0 = No*	2002, 2004	
Years of Tenure at This School	Number of years a teacher has taught at this school (response to Teacher Survey item)	**How many years of teaching experience do you have?** Teaching at this school *Response values: Number of years*	2002, 2004	
STUDENT-LEVEL VARIABLES				
Black	Dummy variable with a value of 1 for African American students	Based on data provided by individual school districts See appendix Tables 7.2.A–7.6.A for more information.	*Varies by district:* 2000–04 for Dodgeland; 2001–03 for Rainfield; 2001–04 for Hickoryville; 2002–04 for Elm County and Riverton	
Free/Reduced-Price Lunch	Dummy variable with a value of 1 for students eligible for free or reduced-price lunch	Based on data provided by individual school districts See appendix Tables 7.2.A–7.6.A for more information.	*Varies by district:* 2000–04 for Dodgeland; 2001–03 for Rainfield; 2001–04 for Hickoryville; 2002–04 for Elm County and	

Variable Name	Measure Description	Data Source/Survey Items	Years Used	Notes
			Riverton	
Gender	Dummy variable with a value of 1 for female students	Based on data provided by individual school districts. See appendix Tables 7.2.A–7.6.A for more information.	*Varies by district:* 2000–04 for Dodgeland; 2001–03 for Rainfield; 2001–04 for Hickoryville; 2002–04 for Elm County and Riverton	
Grade 2, Grade 3, Grade 4, Grade 5, Grade 6, Grade 7, Grade 8	Dummy variables corresponding to students' grade level	Based on data provided by individual school districts. See appendix Tables 7.2.A–7.6.A for more information.	*Varies by district:* 2000–04 for Dodgeland; 2001–03 for Rainfield; 2001–04 for Hickoryville; 2002–04 for Elm County and Riverton	*Available grades vary by district:* Grades 2–8 for Dodgeland; Grades 3–5 for Rainfield and Elm County; Grades 2–5 for Hickoryville; Grades 2–4 for Riverton
Hispanic	Dummy variable with a value of 1 for Hispanic students	Based on data provided by individual school districts. See appendix Tables 7.2.A–7.6.A for more information.	*Varies by district:* 2000–04 for Dodgeland; 2001–03 for Rainfield; 2001–04 for Hickoryville; 2002–04 for Elm County and Riverton	

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Variable Name	Measure Description	Data Source/Survey Items	Years Used	Notes
LEP	Dummy variable with a value of 1 for students considered limited English proficient	Based on data provided by individual school districts See appendix Tables 7.2.A–7.6.A for more information.	*Varies by district:* 2000–04 for Dodgeland; 2001–03 for Rainfield; 2001–04 for Hickoryville; 2002–04 for Elm County and Riverton	
Mathematics	Students' mathematics achievement score	Based on data provided by individual school districts See appendix Tables 7.2.A–7.6.A for more information.	*Varies by district:* 2000–04 for Dodgeland; 2001–03 for Rainfield; 2001–04 for Hickoryville; 2002–04 for Elm County and Riverton	See Tables 7.13 and 7.14 for more information.
Other Minority	Dummy variable with a value of 1 for students representing other minority groups	Based on data provided by individual school districts See appendix Tables 7.2.A–7.6.A for more information.	*Varies by district:* 2000–04 for Dodgeland; 2001–03 for Rainfield; 2001–04 for Hickoryville; 2002–04 for Elm County and Riverton	

Variable Name	Measure Description	Data Source/Survey Items	Years Used	Notes
Reading	Students' reading achievement score	Based on data provided by individual school districts See appendix Tables 7.2.A–7.6.A for more information.	*Varies by district:* 2000–04 for Dodgeland; 2001–03 for Rainfield; 2001–04 for Hickoryville; 2002–04 for Elm County and Riverton	See Tables 7.13 and 7.14 for more information.
Special Education	Dummy variable with a value of 1 for students enrolled in special education	Based on data provided by individual school districts See appendix Tables 7.2.A–7.6.A for more information.	*Varies by district:* 2000–04 for Dodgeland; 2001–03 for Rainfield; 2001–04 for Hickoryville; 2002–04 for Elm County and Riverton	
White	Dummy variable with a value of 1 for White students	Based on data provided by individual school districts See appendix Tables 7.2.A–7.6.A for more information.	*Varies by district:* 2000–04 for Dodgeland; 2001–03 for Rainfield; 2001–04 for Hickoryville; 2002–04 for Elm County and Riverton	

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Appendix C:
Additional Tables of Results

Table 5.1.A. Regression results for implementation of curriculum 2002

	District Base Model			Support for Comm. Outreach			Support for PD for CSR			Program Selection Support			Technical Assistance Support		
	Estimate	SE		Estimate	SE		Estimate	SE		Estimate	SE		Estimate	SE	
Intercept	0.734	0.018	***												
Accelerated Schools Project Key	-0.085	0.011	***												
Co-nect Key	0.002	0.011													
ELOB/TP Key	-0.023	0.027													
MRSh Key	-0.000	0.020													
ATLAS Key															
SFA/KW	-0.013	0.014													
Accelerated Schools Project	-0.017	0.015													
Co-nect	-0.010	0.013													
ELOB/TP	0.013	0.032													
MRSh	0.001	0.026													
ATLAS Communities															
School size	-0.006	0.004													
Percentage free lunch	0.005	0.003													
Percentage non-English speaking	-0.004	0.003													
School has CSR coordinator	-0.003	0.007													
New principal	-0.009	0.008													
Usefulness of developer's information	-0.001	0.003													
Teacher community	0.013	0.005	**												

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	District Base Model			Support for Comm. Outreach			Support for PD for CSR			Program Selection Support			Technical Assistance Support		
	Estimate	SE		Estimate	SE		Estimate	SE		Estimate	SE		Estimate	SE	
Principal leadership	0.008	0.005	*												
School has middle grades	-0.020	0.007	***												
AYP status 2002	0.004	0.007													
3–5 years of implementation	0.028	0.011	**												
5 or more years of implementation	0.024	0.014	*												
New teacher	0.003	0.006													
English teacher	0.123	0.007	***												
Switched CSR model	-0.005	0.014													
Adopted CSR model	-0.006	0.019													
CSR model concentration															
District professional development support															
District technical assistance support															
District CSR model selection support															
District community outreach support															

Significance: $p < 0.1$ *; $p < 0.05$ **; $p < 0.01$ *** (two-tailed test).

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Table 5.2.A. Regression results for type of implementation and emphasis upon professional development 2002

	District Base Model			Support for Comm. Outreach			Support for PD for CSR			Program Selection Support			Technical Assistance Support		
	Estimate	SE		Estimate	SE		Estimate	SE		Estimate	SE		Estimate	SE	
Intercept	0.521	0.025	***	0.513	0.034	***	0.507	0.031	***	0.51	0.038	***	0.551	0.050	***
Accelerated Schools Project Key	-0.015	0.016		-0.015	0.016		-0.015	0.016		-0.016	0.016		-0.014	0.016	
Co-nect Key	0.020	0.015		0.020	0.015		0.020	0.015		0.020	0.015		0.021	0.015	
ELOB/TP Key	0.038	0.023	*	0.037	0.023		0.038	0.023	*	0.040	0.023	*	0.036	0.023	
MRSh Key	-0.033	0.023		-0.032	0.023		-0.030	0.024		-0.032	0.024		-0.034	0.023	
ATLAS Key	-0.008	0.018		-0.008	0.018		-0.007	0.018		-0.008	0.018		-0.007	0.018	
SFA/KW	-0.016	0.017		-0.016	0.017		-0.016	0.017		-0.016	0.017		-0.017	0.017	
Accelerated Schools Project	-0.001	0.023		-0.001	0.023		0.000	0.023		0.000	0.023		-0.001	0.023	
Co-nect	-0.010	0.020		-0.010	0.020		-0.010	0.02		-0.010	0.020		-0.010	0.020	
ELOB/TP	-0.087	0.029	***	-0.088	0.029	***	-0.087	0.029	***	-0.087	0.03	***	-0.088	0.029	***
MRSh	0.048	0.032		0.048	0.032		0.047	0.032		0.047	0.032		0.040	0.032	
ATLAS Communities	0.036	0.026		0.036	0.026		0.036	0.026		0.036	0.026		0.035	0.027	
School size	0.003	0.005		0.004	0.005		0.002	0.005		0.003	0.005		0.003	0.005	
Percentage free lunch	0.004	0.004		0.004	0.004		0.004	0.004		0.004	0.004		0.004	0.004	
Percentage non-English speaking	-0.006	0.004		-0.006	0.004		-0.006	0.004		-0.006	0.004		-0.006	0.004	
School has CSR coordinator	0.012	0.008		0.012	0.008		0.011	0.008		0.012	0.008		0.012	0.008	
New principal	-0.017	0.010	*	-0.017	0.010	*	-0.017	0.010	*	-0.017	0.010	*	-0.017	0.010	*

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	District Base Model		Support for Comm. Outreach		Support for PD for CSR		Program Selection Support		Technical Assistance Support	
	Estimate	SE	Estimate	SE	Estimate	SE	Estimate	SE	Estimate	SE
Usefulness of developer's information	0.024 ***	0.003	0.024 ***	0.003	0.024 ***	0.003	0.024 ***	0.003	0.024 ***	0.003
Teacher community	0.026 ***	0.007	0.026 ***	0.007	0.026 ***	0.007	0.026 ***	0.007	0.026 ***	0.007
Principal leadership	0.032 ***	0.006	0.032 ***	0.006	0.032 ***	0.006	0.032 ***	0.006	0.032 ***	0.006
School has middle grades	0.021 **	0.009	0.021 **	0.010	0.022 **	0.010	0.021 **	0.009	0.020 **	0.009
AYP status 2002	-0.004	0.010	-0.004	0.010	-0.004	0.010	-0.004	0.010	-0.003	0.010
3–5 years of implementation	0.004	0.014	0.004	0.014	0.004	0.014	0.004	0.014	0.004	0.014
5 or more years of implementation	0.000	0.017	0.000	0.017	-0.001	0.017	-0.001	0.017	0.000	0.017
New teacher	-0.023 ***	0.007	-0.023 ***	0.007	-0.023 ***	0.007	-0.022 ***	0.007	-0.023 ***	0.007
English teacher	0.036 ***	0.006	0.036 ***	0.006	0.036 ***	0.006	0.036 ***	0.006	0.036 ***	0.006
Switched CSR model	0.000	0.017	0.000	0.017	0.000	0.017	0.000	0.017	-0.001	0.017
Adopted CSR model	-0.004	0.025	-0.004	0.025	-0.005	0.025	-0.005	0.025	-0.004	0.025
CSR model concentration	0.028	0.032	0.028	0.032	0.019	0.034	0.023	0.034	0.038	0.036
District professional development support					0.020	0.027				
District technical assistance support									-0.035	0.051
District CSR model selection support							0.015	0.037		
District community outreach support			0.005	0.013						

Significance: $p < 0.1$ *; $p < 0.05$ **; $p < 0.01$ *** (two-tailed test).

Table 5.3.A. Regression results for implementation of inclusion by CSR designation, model, school demographics, and stage 2002

	District Base Model			Support for Comm. Outreach			Support for PD for CSR			Program Selection Support			Technical Assistance Support		
Intercept	0.816	0.024	***	0.779	0.033	***	0.779	0.032	***	0.838	0.042	***	0.822	0.057	***
Accelerated Schools Project Key	-0.322	0.016	***	-0.321	0.016	***	-0.321	0.016	***	-0.321	0.016	***	-0.322	0.016	***
Co-nect Key	-0.069	0.016	***	-0.070	0.016	***	-0.070	0.016	***	-0.069	0.016	***	-0.069	0.016	***
ELOB/TP Key	-0.660	0.050	***	-0.656	0.050	***	-0.656	0.050	***	-0.668	0.052	***	-0.662	0.051	***
MRSh Key															
ATLAS Key	-0.538	0.020	***	-0.537	0.019	***	-0.537	0.019	***	-0.537	0.020	***	-0.538	0.020	***
SFA/KW	0.001	0.018		0.002	0.018		0.002	0.018		0.001	0.018		0.001	0.018	
Accelerated Schools Project	0.076	0.024	***	0.076	0.024	***	0.076	0.024	***	0.076	0.024	***	0.076	0.024	***
Co-nect	0.031	0.021		0.031	0.021		0.031	0.021		0.031	0.021		0.031	0.021	
ELOB/TP	0.003	0.060		0.002	0.060		0.002	0.060		0.002	0.060		0.003	0.060	
MRSh															
ATLAS Communities	0.033	0.027		0.033	0.030		0.033	0.027		0.033	0.027		0.033	0.027	
School size	0.005	0.006		0.003	0.006		0.003	0.006		0.006	0.006		0.005	0.006	
Percentage free lunch	0.006	0.004		0.006	0.004		0.006	0.004		0.005	0.004		0.006	0.004	
Percentage non-English speaking	-0.010	0.004	**	-0.011	0.004		-0.011	0.004	**	-0.010	0.004	**	-0.010	0.004	**
School has CSR coordinator	-0.010	0.009		-0.012	0.009		-0.012	0.009		-0.010	0.009		-0.010	0.009	
New principal	0.003	0.011		0.003	0.011		0.003	0.011		0.003	0.011		0.003	0.011	
Usefulness of developer's information	-0.002	0.003		-0.002	0.003		-0.002	0.003		-0.002	0.003		-0.002	0.003	

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	District Base Model			Support for Comm. Outreach			Support for PD for CSR			Program Selection Support			Technical Assistance Support		
Teacher community	0.002	0.006		0.002	0.006		0.002	0.006		0.002	0.006		0.002	0.006	
Principal leadership	0.008	0.005		0.007	0.005		0.007	0.005		0.008	0.005		0.008	0.005	
School has middle grades	0.001	0.011		0.004	0.011		0.004	0.011		0.001	0.011		0.001	0.011	
AYP status 2002	-0.007	0.012		-0.007	0.012		-0.007	0.012		-0.007	0.012		-0.007	0.012	
3–5 years of implementation	-0.011	0.016		-0.010	0.016		-0.010	0.016		-0.011	0.016		-0.011	0.016	
5 or more years of implementation	-0.025	0.019		-0.026	0.018		-0.026	0.018		-0.024	0.019		-0.025	0.019	
New teacher	0.001	0.005		0.001	0.006		0.001	0.006		0.001	0.006		0.001	0.006	
English teacher	0.048	0.005	***	0.048	0.005	***	0.048	0.005	***	0.048	0.005	***	0.048	0.005	***
Switched CSR model	0.007	0.020		0.006	0.020		0.006	0.020		0.007	0.020		0.007	0.020	
Adopted CSR model	-0.054	0.028	*	-0.055	0.028	*	-0.055	0.028	*	-0.054	0.028	*	-0.054	0.028	*
CSR model concentration	-0.043	0.040		-0.058	0.040		-0.058	0.040		-0.036	0.042		-0.041	0.043	
District professional development support							0.051	0.031							
District technical assistance support													-0.007	0.061	
District CSR model selection support										-0.028	0.045				
District community outreach support				0.051	0.031										

Significance: $p < 0.1$ *; $p < 0.05$ **; $p < 0.01$ *** (two-tailed test).

Table 5.4.A. Regression results for implementation of influence of assessment 2002

	District Base Model			Support for Comm. Outreach			Support for PD for CSR			Program Selection Support			Technical Assistance Support		
	Estimate	SE		Estimate	SE		Estimate	SE		Estimate	SE		Estimate	SE	
Intercept	0.686	0.017	***	0.655	0.022	***	0.712	0.020	***	0.741	0.025	***	0.786	0.029	***
Accelerated Schools Project Key	-0.038	0.009	***	-0.037	0.009	***	-0.038	0.010	***	-0.035	0.010	***	-0.029	0.010	***
Co-nect Key	0.014	0.010		0.012	0.009		0.012	0.010		0.012	0.010		0.013	0.010	
ELOB/TP Key	-0.019	0.026		-0.026	0.026		-0.019	0.025		-0.043	0.027		-0.043	0.026	
MRSh Key	0.099	0.015	***	0.100	0.015	***	0.093	0.015	***	0.092	0.015	***	0.086	0.015	***
ATLAS Key	0.038	0.012	***	0.036	0.012	***	0.034	0.012	***	0.034	0.012	***	0.033	0.012	***
SFA/KW	-0.008	0.011		0.000	0.010		-0.010	0.011		-0.010	0.011		-0.011	0.011	
Accelerated Schools Project	0.003	0.015		0.002	0.014		0.001	0.015		0.002	0.015		-0.001	0.015	
Co-nect	0.011	0.013		0.010	0.013		0.010	0.013		0.009	0.013		0.008	0.013	
ELOB/TP	0.003	0.029		0.004	0.030		0.005	0.030		0.002	0.030		0.004	0.030	
MRSh	0.003	0.021		0.004	0.021		0.003	0.021		0.004	0.021		0.003	0.021	
ATLAS Communities	0.011	0.017		0.010	0.017		0.010	0.017		0.009	0.017		0.003	0.018	
School size	0.000	0.003		0.001	0.003		0.002	0.003		0.002	0.003		-0.001	0.003	
Percentage free lunch	-0.005	0.003	*	-0.005	0.003	*	-0.006	0.003	**	-0.006	0.003	**	-0.006	0.003	**
Percentage non-English speaking	0.000	0.003		0.000	0.003		0.000	0.003		0.000	0.003		0.000	0.003	
School has CSR coordinator	0.007	0.005		0.007	0.005		0.008	0.005		0.007	0.005		0.006	0.005	
New principal	-0.003	0.007		-0.003	0.007		-0.003	0.007		-0.004	0.007		-0.003	0.007	

	District Base Model			Support for Comm. Outreach			Support for PD for CSR			Program Selection Support			Technical Assistance Support		
	Estimate	SE		Estimate	SE		Estimate	SE		Estimate	SE		Estimate	SE	
Usefulness of developer's information	0.004	0.002		0.004	0.002	*	0.004	0.002		0.004	0.002		0.004	0.002	*
Teacher community	0.000	0.005		0.000	0.005		0.000	0.005		0.000	0.005		0.000	0.005	
Principal leadership	0.022	0.004	***	0.022	0.004	***	0.022	0.004	***	0.022	0.004	***	0.023	0.004	***
School has middle grades	-0.013	0.006	**	-0.012	0.006	*	-0.015	0.006	**	-0.014	0.006	**	-0.010	0.007	
AYP status 2002	-0.002	0.007		-0.002	0.007		-0.002	0.007		0.001	0.007		0.001	0.007	
3–5 years of implementation	-0.001	0.010		0.000	0.010		0.000	0.010		0.000	0.010		0.001	0.010	
5 or more years of implementation	0.015	0.011		0.016	0.011		0.017	0.011		0.019	0.011	*	0.022	0.017	*
New teacher	-0.009	0.005	**	-0.009	0.005	**	-0.009	0.005	*	-0.009	0.005	**	-0.009	0.005	*
English teacher	0.015	0.004	***	0.015	0.004	***	0.016	0.004	***	0.016	0.004	***	0.015	0.004	***
Switched CSR model	-0.030	0.012	**	-0.030	0.012	***	-0.030	0.012	***	-0.031	0.012	***	-0.032	0.012	***
Adopted CSR model	-0.006	0.016		-0.007	0.016		-0.006	0.016		-0.005	0.016		-0.008	0.017	
CSR model concentration	0.019	0.022		0.017	0.020		0.035	0.021	*	0.039	0.020	**	0.054	0.019	***
District professional development support							-0.033	0.017	**						
District technical assistance support													-0.123	0.028	***
District CSR Model Selection Support										-0.073	0.023	***			
District Community Outreach Support				0.017	0.008	**									

Significance: $p < 0.1$ *; $p < 0.05$ **; $p < 0.01$ *** (two-tailed test).

Table 5.5.A. Regression results for implementation of informal professional development 2002

	District Base Model			Support for Comm. Outreach			Support for PD for CSR			Program Selection Support			Technical Assistance Support		
	Estimate	SE		Estimate	SE		Estimate	SE		Estimate	SE		Estimate	SE	
Intercept	0.518	0.023	***	0.497	0.030	***	0.518	0.028	***	0.539	0.035	***	0.526	0.046	***
Accelerated Schools Project Key	-0.156	0.015	***	-0.155	0.015	***	-0.156	0.015	***	-0.155	0.015	***	-0.155	0.015	***
Co-nect Key	-0.114	0.015	***	-0.115	0.014	***	-0.114	0.014	***	-0.114	0.014	***	-0.114	0.015	***
ELOB/TP Key	-0.052	0.040		-0.059	0.040		-0.052	0.04	0	-0.062	0.042		-0.053	0.041	
MRSh Key	-0.054	0.022	**	-0.053	0.022	**	-0.054	0.023	**	-0.056	0.022	**	-0.054	0.022	**
ATLAS Key	0.008	0.018		0.007	0.018		0.008	0.018		0.008	0.018		0.008	0.018	
SFA/KW	-0.017	0.016		-0.017	0.016		-0.017	0.016		-0.017	0.016		-0.017	0.016	
Accelerated Schools Project	0.027	0.022		0.027	0.022		0.027	0.022		0.027	0.022		0.027	0.022	
Co-nect	0.005	0.019		0.005	0.019		0.005	0.019		0.005	0.019		0.005	0.019	
ELOB/TP	-0.033	0.047		-0.033	0.047		-0.033	0.047		-0.034	0.047		-0.033	0.047	
MRSh	0.042	0.031		0.042	0.031		0.042	0.031		0.042	0.031		0.042	0.031	
ATLAS Communities	0.024	0.026		0.026	0.026		0.026	0.026		0.026	0.026		0.026	0.026	
School size	-0.001	0.005		0.000	0.005		-0.001	0.005		0.000	0.005		-0.001	0.005	
Percentage free lunch	-0.003	0.004		-0.003	0.004		-0.003	0.004		-0.003	0.004		-0.003	0.004	
Percentage non-English speaking	-0.001	0.004		-0.001	0.004		-0.001	0.004		-0.001	0.004		-0.001	0.004	
School has CSR coordinator	0.013	0.008		0.013	0.008		0.013	0.008		0.013	0.008	*	0.013	0.008	
New principal	-0.010	0.010		-0.010	0.010		-0.010	0.010		-0.010	0.010		-0.010	0.010	

	District Base Model			Support for Comm. Outreach			Support for PD for CSR			Program Selection Support			Technical Assistance Support		
	Estimate	SE		Estimate	SE		Estimate	SE		Estimate	SE		Estimate	SE	
Usefulness of developer's information	0.013	0.003	***	0.013	0.003	***	0.013	0.003	***	0.013	0.003	***	0.013	0.003	***
Teacher community	0.017	0.006	***	0.017	0.006	***	0.017	0.006	***	0.017	0.006	***	0.017	0.006	***
Principal leadership	0.063	0.006	***	0.064	0.006	***	0.063	0.006	***	0.064	0.006	***	0.063	0.006	***
School has middle grades	0.004	0.009		0.005	0.009		0.004	0.009		0.003	0.009		0.004	0.010	
AYP status 2002	-0.005	0.010		-0.005	0.010		-0.005	0.010		-0.003	0.010		-0.005	0.010	
3–5 years of implementation	0.004	0.014		0.004	0.014		0.004	0.014		0.004	0.014		0.004	0.014	
5 or more years of implementation	0.007	0.017		0.007	0.017		0.007	0.017		0.008	0.017		0.007	0.017	
New teacher	-0.012	0.006	*	-0.012	0.006	*	-0.012	0.006	*	-0.012	0.006	*	-0.012	0.006	*
English teacher	-0.012	0.006	**	-0.012	0.006	**	-0.012	0.006	**	-0.012	0.006	**	-0.012	0.006	**
Switched CSR model	0.011	0.018		0.011	0.018		0.011	0.018		0.011	0.018		0.011	0.018	
Adopted CSR model	-0.030	0.024		-0.030	0.024		-0.031	0.024		-0.030	0.024		-0.030	0.024	
CSR model concentration	0.005	0.028		0.004	0.028		0.005	0.030		0.013	0.030		0.008	0.032	
District professional development support							0.001	0.023							
District technical assistance support													-0.008	0.047	
District CSR model selection support										-0.027	0.035				
District community outreach support				0.012	0.011										

Significance: *p* < 0.1 *; *p* < 0.05 **; *p* < 0.01 *** (two-tailed test).

Table 5.6.A. Regression results for implementation of parent–community outreach 2002

	District Base Model			Support for Comm. Outreach			Support for PD for CSR			Program Selection Support			Technical Assistance Support		
	Estimate	SE		Estimate	SE		Estimate	SE		Estimate	SE		Estimate	SE	
Intercept	0.435	0.024	***	0.422	0.035	***	0.458	0.032	***	0.489	0.040	***	0.462	0.054	***
Accelerated Schools Project Key	0.046	0.017	***	0.047	0.017	***	0.046	0.017	***	0.049	0.017	***	0.048	0.017	***
Co-nect Key	0.027	0.016	*	0.026	0.016		0.027	0.016	*	0.028	0.016	*	0.028	0.016	*
ELOB/TP Key	0.023	0.046		0.020	0.047		0.022	0.046		0.000	0.048		0.018	0.047	
MRSh Key															
ATLAS Key	0.116	0.020	***	0.115	0.020	***	0.114	0.020	***	0.116	0.020	***	0.117	0.020	***
SFA/KW	-0.010	0.017		-0.011	0.019		-0.011	0.019		-0.011	0.019		-0.011	0.019	
Accelerated Schools Project	-0.015	0.025		-0.015	0.025		-0.016	0.025		-0.015	0.025		-0.010	0.025	
Co-nect	-0.016	0.022		-0.016	0.022		-0.016	0.022		-0.016	0.022		-0.016	0.022	
ELOB/TP	0.099	0.054	*	0.099	0.054	*	0.099	0.053	*	0.097	0.054	*	0.099	0.054	*
MRSh															
ATLAS Communities	-0.030	0.029		-0.030	0.029		-0.031	0.029		-0.031	0.029		-0.031	0.029	
School size	0.005	0.006		0.005	0.006		0.006	0.006		0.007	0.006		0.005	0.006	
Percentage free lunch	-0.001	0.004		-0.001	0.004		-0.002	0.004		-0.001	0.004		-0.001	0.004	
Percentage non-English speaking	0.002	0.004		0.002	0.005		0.003	0.005		0.003	0.005		0.002	0.005	
School has CSR coordinator	-0.026	0.009	***	-0.026	0.009	***	-0.025	0.009	***	-0.026	0.009	***	-0.026	0.009	***
New principal	0.006	0.012		0.006	0.012		0.006	0.012		0.006	0.012		0.006	0.012	

	District Base Model			Support for Comm. Outreach			Support for PD for CSR			Program Selection Support			Technical Assistance Support		
	Estimate	SE		Estimate	SE		Estimate	SE		Estimate	SE		Estimate	SE	
Usefulness of developer's information	0.024	0.003	***	0.024	0.003	***	0.024	0.003	***	0.024	0.003	***	0.024	0.003	***
Teacher community	0.033	0.006	***	0.033	0.006	***	0.033	0.006	***	0.032	0.006	***	0.033	0.006	***
Principal leadership	0.023	0.005	***	0.023	0.005	***	0.023	0.005	***	0.023	0.005	***	0.023	0.005	***
School has middle grades	-0.048	0.011	***	-0.048	0.011	***	-0.050	0.011	***	-0.048	0.011	***	-0.040	0.011	***
AYP status 2002	-0.030	0.012	**	-0.029	0.012	**	-0.029	0.012	**	-0.026	0.012	**	-0.029	0.012	**
3–5 years of implementation	0.000	0.016		0.000	0.016		0.000	0.016		0.000	0.016		0.000	0.016	
5 or more years of implementation	0.005	0.019		0.005	0.019		0.005	0.019		0.006	0.019		0.005	0.019	
New teacher	-0.004	0.006		-0.004	0.006		-0.004	0.006		-0.004	0.006		-0.004	0.006	
English teacher	-0.002	0.005		-0.002	0.005		-0.002	0.005		-0.002	0.005		-0.002	0.005	
Switched CSR model	0.002	0.020		0.002	0.020		0.003	0.020		0.003	0.020		0.003	0.020	
Adopted CSR model	0.021	0.029		0.021	0.029		0.022	0.029		0.023	0.029		0.020	0.029	
CSR model concentration	-0.043	0.038		-0.046	0.038		-0.036	0.038		-0.034	0.037		-0.035	0.041	
District professional development support							-0.033	0.028							
District technical assistance support													-0.033	0.057	
District CSR model selection support										-0.069	0.039	*			
District community outreach support				0.007	0.014										

Significance: $p < 0.1$ *; $p < 0.05$ **; $p < 0.01$ *** (two-tailed test).

Table 5.7.A. Regression results for implementation of pedagogy 2002

	District Base Model			Support for Comm. Outreach			Support for PD for CSR			Program Selection Support			Technical Assistance Support		
	Estimate	SE		Estimate	SE		Estimate	SE		Estimate	SE		Estimate	SE	
Intercept	0.898	0.014	***	0.891	0.016	***	0.892	0.016	***	0.881	0.020	***	0.878	0.024	***
Accelerated Schools Project Key	-0.275	0.008	***	-0.270	0.008	***	-0.275	0.008	***	-0.275	0.008	***	-0.278	0.008	***
Co-nect Key	-0.049	0.008	***	-0.050	0.008	***	-0.049	0.008	***	-0.049	0.008	***	-0.051	0.008	***
ELOB/TP Key	-0.033	0.020	*	-0.036	0.020	*	-0.032	0.020		-0.023	0.021		-0.026	0.021	
MRSh Key	-0.039	0.012	***	-0.040	0.011	***	-0.037	0.012	***	-0.036	0.012	***	-0.038	0.012	***
ATLAS Key	-0.046	0.009	***	-0.046	0.009	***	-0.045	0.009	***	-0.046	0.009	***	-0.048	0.009	***
SFA/KW	0.008	0.010		0.008	0.010		0.008	0.010		0.008	0.010		0.008	0.010	
Accelerated Schools Project	0.031	0.012	***	0.031	0.012	***	0.031	0.012	***	0.031	0.012	***	0.032	0.012	***
Co-nect	0.011	0.010		0.011	0.010		0.011	0.010		0.011	0.010		0.011	0.010	
ELOB/TP	0.001	0.023		0.000	0.023		0.000	0.023		0.001	0.023		0.000	0.023	
MRSh	0.011	0.016		0.012	0.016		0.010	0.016		0.010	0.016		0.011	0.016	
ATLAS Communities	0.005	0.013		0.005	0.013		0.005	0.013		0.005	0.013		0.005	0.013	
School size	-0.003	0.003		-0.002	0.003		-0.003	0.003		-0.003	0.003		-0.002	0.003	
Percentage free lunch	-0.001	0.002		-0.001	0.002		-0.001	0.002		-0.001	0.002		-0.001	0.002	
Percentage non-English speaking	0.002	0.002		0.002	0.002		0.002	0.003		0.002	0.002		0.002	0.002	
School has CSR coordinator	0.005	0.005		0.005	0.005		0.005	0.005		0.005	0.005		0.005	0.005	
New principal	0.005	0.006		0.005	0.006		0.005	0.000		0.005	0.006		0.005	0.006	

	District Base Model		Support for Comm. Outreach		Support for PD for CSR		Program Selection Support		Technical Assistance Support	
	Estimate	SE	Estimate	SE	Estimate	SE	Estimate	SE	Estimate	SE
Usefulness of developer's information	-0.001	0.002	0.000	0.002	-0.001	0.002	-0.001	0.002	0.000	0.002
Teacher community	0.002	0.004	0.002	0.004	0.003	0.004	0.003	0.004	0.003	0.004
Principal leadership	0.008	0.004 **	0.008	0.004 **	0.008	0.004 **	0.007	0.004 **	0.008	0.004 **
School has middle grades	-0.001	0.005 ***	-0.001	0.005 ***	-0.001	0.005	-0.001	0.005	-0.002	0.005
AYP status 2002	0.000	0.005	0.000	0.005	0.000	0.005	-0.001	0.005	0.000	0.005
3–5 years of implementation	-0.007	0.008	-0.008	0.008	-0.007	0.008	-0.007	0.008	-0.007	0.008
5 or more years of implementation	-0.003	0.010	-0.003	0.010	-0.003	0.010	-0.004	0.010	-0.003	0.010
New teacher	-0.007	0.004 *	-0.007	0.004 *	-0.007	0.004 *	-0.007	0.004 *	-0.007	0.004 *
English teacher	0.030	0.004 ***	0.030	0.004 ***	0.030	0.004 ***	0.030	0.004 ***	0.030	0.004 ***
Switched CSR model	0.012	0.010	0.010	0.010	0.012	0.010	0.012	0.010	0.012	0.010
Adopted CSR model	-0.006	0.014	-0.005	0.014	-0.006	0.014	-0.008	0.014	-0.007	0.014
CSR model concentration	0.022	0.013 *	0.020	0.012	0.020	0.014	0.018	0.014	0.017	0.014
District professional development support					0.007	0.011				
District technical assistance support									0.023	0.023
District CSR model selection support							0.020	0.018		
District community outreach support			0.004	0.004						

Significance: $p < 0.1$ *; $p < 0.05$ **; $p < 0.01$ *** (two-tailed test).

Table 5.8.A. Regression results for implementation of instructional time 2002

	District Base Model			Support for Comm. Outreach			Support for PD for CSR			Program Selection Support			Technical Assistance Support		
	Estimate	SE		Estimate	SE		Estimate	SE		Estimate	SE		Estimate	SE	
Intercept	0.877	0.017	***	0.874	0.026	***	0.887	0.023	***	0.909	0.027	***	0.930	0.035	***
Accelerated Schools Project Key	0.037	0.011	***	0.037	0.011	***	0.037	0.011	***	0.039	0.011	***	0.040	0.011	***
Co-nect Key	-0.332	0.010	***	-0.332	0.010	***	-0.332	0.01	***	-0.332	0.01	***	-0.331	0.01	***
ELOB/TP Key	-0.094	0.016	***	-0.094	0.016	***	-0.094	0.016	***	-0.097	0.016	***	-0.097	0.016	***
MRSh Key	0.007	0.016		0.008	0.017		0.006	0.017		0.005	0.016		0.005	0.016	
ATLAS Key	-0.036	0.013	***	-0.036	0.013	***	-0.036	0.013	***	-0.035	0.013	***	-0.034	0.013	***
SFA/KW	-0.015	0.012		-0.015	0.012		-0.015	0.012		-0.015	0.012		-0.015	0.012	
Accelerated Schools Project	-0.021	0.016		-0.021	0.016		-0.022	0.016		-0.022	0.016		-0.023	0.016	
Co-nect	0.031	0.014	**	0.031	0.014	**	0.031	0.014	**	0.031	0.014	**	0.031	0.013	**
ELOB/TP	0.011	0.021		0.011	0.021		0.011	0.021		0.009	0.021		0.01	0.021	
MRSh	-0.029	0.022		-0.029	0.022		-0.029	0.022		-0.029	0.022		-0.029	0.022	
ATLAS Communities	0.017	0.019		0.017	0.019		0.017	0.019		0.016	0.018		0.016	0.018	
School size	-0.008	0.004	**	-0.008	0.004	**	-0.008	0.004	**	-0.007	0.004	*	-0.008	0.004	**
Percentage free lunch	-0.006	0.003	**	-0.006	0.003	**	-0.007	0.003	**	-0.007	0.003	**	-0.007	0.003	**
Percentage non-English speaking	0.004	0.003		0.004	0.003		0.004	0.003		0.004	0.003		0.004	0.003	
School has CSR coordinator	0.005	0.006	***	0.005	0.006	***	0.005	0.006		0.005	0.006		0.005	0.006	
New principal	0.011	0.007		0.011	0.007		0.011	0.007		0.011	0.007		0.011	0.007	

	District Base Model			Support for Comm. Outreach			Support for PD for CSR			Program Selection Support			Technical Assistance Support		
	Estimate	SE		Estimate	SE		Estimate	SE		Estimate	SE		Estimate	SE	
Usefulness of developer's information	0.000	0.002		0.000	0.002		0.000	0.002		0.000	0.002		0.000	0.002	
Teacher community	-0.001	0.004		-0.001	0.004		-0.002	0.004		-0.002	0.004		-0.002	0.004	
Principal leadership	0.012	0.004	***	0.012	0.004	***	0.012	0.004	***	0.012	0.004	***	0.012	0.004	***
School has middle grades	-0.022	0.007	***	-0.022	0.007	***	-0.022	0.007	***	-0.022	0.007	***	-0.021	0.007	***
AYP status 2002	0.002	0.007		0.002	0.007		0.002	0.007		0.003	0.007		0.003	0.007	
3–5 years of implementation	0.008	0.010		0.008	0.010		0.008	0.010		0.008	0.010		0.008	0.010	
5 or more years of implementation	0.018	0.012		0.018	0.012		0.018	0.012		0.019	0.012		0.019	0.012	
New teacher	-0.003	0.004		-0.003	0.004		-0.003	0.004		-0.003	0.004		-0.003	0.004	
English teacher	-0.005	0.004		-0.005	0.004		-0.005	0.004		-0.005	0.004		-0.005	0.004	
Switched CSR model	-0.003	0.012		-0.003	0.012		-0.003	0.012		-0.004	0.012		-0.004	0.012	
Adopted CSR model	0.024	0.018		0.024	0.018		0.025	0.018		0.026	0.018		0.025	0.018	
CSR model concentration	0.023	0.024		0.023	0.024		0.029	0.025		0.037	0.025		0.042	0.025	*
District professional development support							-0.016	0.021							
District technical assistance support													-0.065	0.037	
District CSR model selection support										-0.043	0.027				
District community outreach support				0.002	0.011	***									

Significance: $p < 0.1$ *; $p < 0.05$ **; $p < 0.01$ *** (two-tailed test).

Table 5.9.A. Regression results for implementation of shared decision making 2002

	District Base Model			Support for Comm. Outreach			Support for PD for CSR			Program Selection Support			Technical Assistance Support		
	Estimate	SE		Estimate	SE		Estimate	SE		Estimate	SE		Estimate	SE	
Intercept	0.478	0.023	***	0.452	0.035	***	0.467	0.031	***	0.442	0.038	***	0.392	0.049	***
Accelerated Schools Project Key	-0.081	0.016	***	-0.081	0.016	***	-0.081	0.016	***	-0.082	0.016	***	-0.085	0.016	***
Co-nect Key	-0.091	0.015	***	-0.092	0.015	***	-0.091	0.015	***	-0.091	0.015	***	-0.093	0.015	***
ELOB/TP Key	-0.021	0.023		-0.024	0.024		-0.021	0.023		-0.018	0.023		-0.017	0.023	
MRSh Key	-0.083	0.023	***	-0.083	0.023	***	-0.081	0.024	***	-0.081	0.023	***	-0.082	0.023	***
ATLAS Key	-0.282	0.019	***	-0.283	0.019	***	-0.282	0.019	***	-0.283	0.019	***	-0.285	0.018	***
SFA/KW	-0.006	0.017		-0.006	0.017		-0.006	0.017		-0.005	0.017		-0.006	0.017	
Accelerated Schools Project	0.018	0.023		0.017	0.023		0.018	0.023		0.019	0.022		0.020	0.022	
Co-nect	-0.027	0.020		-0.027	0.020		-0.027	0.020		-0.026	0.020		-0.027	0.020	
ELOB/TP	-0.075	0.030	**	-0.076	0.030	**	-0.075	0.030	**	-0.073	0.030	**	-0.073	0.030	**
MRSh	0.009	0.031		0.01	0.032		0.009	0.031		0.008	0.031		0.008	0.031	
ATLAS Communities	-0.021	0.026		-0.021	0.026		-0.021	0.026		-0.022	0.026		-0.021	0.026	
School size	0.005	0.006		0.005	0.006		0.004	0.006		0.003	0.006		0.004	0.006	
Percentage free lunch	0.002	0.004		0.002	0.004		0.003	0.004		0.003	0.004		0.003	0.004	
Percentage non-English speaking	-0.002	0.004		-0.001	0.004		-0.002	0.004		-0.002	0.004		-0.001	0.004	
School has CSR coordinator	0.011	0.008		0.011	0.008		0.01	0.008		0.010	0.008		0.01	0.008	
New principal	-0.012	0.01		-0.012	0.01		-0.013	0.01		-0.012	0.01		-0.013	0.01	

	District Base Model			Support for Comm. Outreach			Support for PD for CSR			Program Selection Support			Technical Assistance Support		
	Estimate	SE		Estimate	SE		Estimate	SE		Estimate	SE		Estimate	SE	
Usefulness of developer's information	0.009	0.003	***	0.009	0.003	***	0.01	0.003	***	0.009	0.003	***	0.009	0.003	***
Teacher community	0.016	0.006	***	0.016	0.006	***	0.016	0.006	***	0.016	0.006	***	0.016	0.006	***
Principal leadership	0.055	0.005	***	0.055	0.005	***	0.055	0.005	***	0.054	0.005	***	0.055	0.005	***
School has middle grades	-0.010	0.010		-0.010	0.010		-0.010	0.010		-0.009	0.010		-0.009	0.009	
AYP status 2002	0.022	0.011	**	0.022	0.011	**	0.022	0.011	**	0.021	0.011	*	0.021	0.010	**
3–5 years of implementation	0.016	0.014		0.016	0.014		0.016	0.01		0.016	0.014		0.016	0.014	
5 or more years of implementation	-0.001	0.017		0.000	0.017		-0.001	0.017		-0.001	0.017		-0.001	0.017	
New teacher	0.000	0.006		0.000	0.006		0.000	0.006		0.000	0.006		0.000	0.006	
English teacher	-0.014	0.005	***	-0.014	0.005	***	-0.014	0.005	***	-0.014	0.005	***	-0.014	0.005	***
Switched CSR model	-0.016	0.017		-0.016	0.017		-0.016	0.017		-0.015	0.017		-0.014	0.017	
Adopted CSR model	-0.016	0.025		-0.016	0.025		-0.016	0.025		-0.017	0.025		-0.016	0.025	
CSR model concentration	0.003	0.035		0.003	0.034		-0.003	0.037		-0.012	0.036		-0.028	0.036	
District professional development support							0.015	0.03							
District technical assistance support													0.103	0.051	**
District CSR model selection support										0.047	0.039				
District community outreach support				0.014	0.015										

Significance: $p < 0.1$ *; $p < 0.05$ **; $p < 0.01$ *** (two-tailed test).

274

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Table 5.10.A. Regression results for implementation of student grouping 2002

	District Base Model			Support for Comm. Outreach		Support for PD for CSR		Program Selection Support		Technical Assistance Support	
	Estimate	SE		Estimate	SE	Estimate	SE	Estimate	SE	Estimate	SE
Intercept	0.854	0.022	***								
Accelerated Schools Project Key	-0.033	0.013	**								
Co-nect Key	-0.084	0.013	***								
ELOB/TP Key	-0.052	0.019	***								
MRSh Key	0.002	0.020									
ATLAS Key	0.019	0.016									
SFA/KW	-0.031	0.014	**								
Accelerated Schools Project	-0.014	0.020									
Co-nect	-0.028	0.018									
ELOB/TP	0.032	0.026	***								
MRSh	-0.018	0.028									
ATLAS Communities	-0.022	0.024									
School size	0.011	0.004	***								
Percentage free lunch	0.002	0.004									
Percentage non-English speaking	0.001	0.004	***								
School has CSR coordinator	0.017	0.007	**								
New principal	-0.015	0.009	*								

	District Base Model		Support for Comm. Outreach		Support for PD for CSR		Program Selection Support		Technical Assistance Support	
	Estimate	SE	Estimate	SE	Estimate	SE	Estimate	SE	Estimate	SE
Usefulness of developer's information	0.006	0.003 *								
Teacher community	0.006	0.007								
Principal leadership	0.008	0.006								
School has middle grades	-0.018	0.007 ***								
AYP status 2002	-0.018	0.007 **								
3–5 years of implementation	0.016	0.012								
5 or more years of implementation	0.025	0.014 *								
New teacher	0.004	0.007								
English teacher	0.001	0.006								
Switched CSR model	0.002	0.015								
Adopted CSR model	-0.039	0.023 *								
CSR model concentration										
District professional development support										
District technical assistance support										
District CSR model selection support										
District community outreach support										

Significance: $p < 0.1$ *; $p < 0.05$ **; $p < 0.01$ *** (two-tailed test).

Table 5.11.A. Regression results for implementation of use of technology in classrooms 2002

	District Base Model			Support for Comm. Outreach			Support for PD for CSR			Program Selection Support			Technical Assistance Support		
	Estimate	SE		Estimate	SE		Estimate	SE		Estimate	SE		Estimate	SE	
Intercept	0.495	0.037	***	0.411	0.054	***	0.488	0.051	***	0.548	0.062	***	0.609	0.079	***
Accelerated Schools Project Key	-0.060	0.023	***	-0.069	0.023	***	-0.069	0.023	***	-0.067	0.023	***	-0.066	0.023	***
Co-nect Key	-0.044	0.022	**	-0.047	0.022	**	-0.044	0.022	**	-0.044	0.022	**	-0.042	0.022	*
ELOB/TP Key	-0.113	0.039	***	-0.123	0.039	***	-0.113	0.039	***	-0.117	0.039	***	-0.12	0.039	***
MRSh Key															
ATLAS Key	-0.068	0.028	**	-0.071	0.028	**	-0.068	0.028	**	-0.068	0.028	**	-0.067	0.028	**
SFA/KW	-0.047	0.025	*	-0.048	0.025	*	-0.046	0.025	*	-0.047	0.025	*	-0.047	0.025	*
Accelerated Schools Project	-0.044	0.034		-0.044	0.034		-0.043	0.034		-0.044	0.034		-0.045	0.034	
Co-nect	0.061	0.029	**	0.062	0.029	**	0.061	0.029	**	0.061	0.029	**	0.062	0.029	**
ELOB/TP	0.059	0.050		0.058	0.050		0.060	0.050		0.055	0.050		0.058	0.050	
MRSh															
ATLAS Communities	0.000	0.039		0.000	0.039		-0.001	0.039		0.000	0.039		-0.002	0.039	
School size	-0.010	0.009		-0.007	0.008		-0.01	0.009		-0.008	0.009		-0.009	0.008	
Percentage free lunch	0.005	0.006		0.005	0.006		0.006	0.006		0.005	0.006		0.005	0.006	
Percentage non-English speaking	-0.006	0.006		-0.005	0.006		-0.006	0.006		-0.006	0.006		-0.006	0.006	
School has CSR coordinator	-0.014	0.012		-0.014	0.012		-0.014	0.012		-0.014	0.012		-0.013	0.012	
New principal	0.000	0.016		0.000	0.015		-0.0004	0.016		-0.001	0.015		0.000	0.015	

	District Base Model			Support for Comm. Outreach			Support for PD for CSR			Program Selection Support			Technical Assistance Support		
	Estimate	SE		Estimate	SE		Estimate	SE		Estimate	SE		Estimate	SE	
Usefulness of developer's information	0.017	0.004	***	0.017	0.004	***	0.017	0.004	***	0.017	0.004	***	0.017	0.004	***
Teacher community	0.008	0.009		0.008	0.009		0.008	0.009		0.08	0.009		0.008	0.009	
Principal leadership	0.021	0.008	***	0.022	0.008	***	0.021	0.008	***	0.021	0.008	***	0.021	0.008	***
School has middle grades	-0.027	0.015	*	-0.027	0.015	*	-0.026	0.015	*	-0.029	0.015	*	-0.028	0.015	*
AYP status 2002	-0.015	0.016		-0.015	0.016		-0.015	0.016		-0.014	0.016		-0.015	0.016	
3–5 years of implementation	0.023	0.022		0.023	0.022		0.023	0.022		0.022	0.022		0.022	0.022	
5 or more years of implementation	0.010	0.026		0.012	0.026		0.010	0.026		0.012	0.026		0.013	0.026	
New teacher	-0.049	0.009	***	-0.049	0.009	***	-0.049	0.009	***	-0.049	0.009	***	-0.049	0.009	***
English teacher	0.041	0.008	***	0.042	0.008	***	0.041	0.008	***	0.047	0.008	***	0.042	0.008	***
Switched CSR model	0.011	0.027		0.011	0.027		0.011	0.027		0.010	0.027		0.010	0.027	
Adopted CSR model	0.050	0.040		0.051	0.040		0.050	0.040	***	0.051	0.040		0.050	0.040	
CSR model concentration	0.032	0.060		0.019	0.057		0.029	0.062		0.050	0.062		0.067	0.061	
District professional development support							0.010	0.050							
District technical assistance support													-0.135	0.084	
District CSR model selection support										-0.068	0.065				
District community outreach support				0.047	0.022	**									

Significance: $p < 0.1$ *; $p < 0.05$ **; $p < 0.01$ *** (two-tailed test).

Table 5.12.A. Regression results for level of total implementation 2002

	District Base Model			Support for Comm. Outreach			Support for PD for CSR			Program Selection Support			Technical Assistance Support		
	Estimate	SE		Estimate	SE		Estimate	SE		Estimate	SE		Estimate	SE	
Intercept	0.557	0.008	***	0.548	0.012	***	0.552	0.01	***	0.565	0.013	***	0.565	0.017	***
Accelerated Schools Project Key	-0.094	0.005	***	-0.094	0.005	***	-0.094	0.005	***	-0.094	0.005	***	-0.094	0.005	***
Co-nect Key	-0.043	0.005	***	-0.043	0.005	***	-0.043	0.005	***	-0.043	0.005	***	-0.042	0.005	***
ELOB/TP Key	0.000	0.014		-0.003	0.015		0.001	0.014		-0.004	0.015		-0.002	0.015	
MRSh Key	-0.001	0.008		-0.000	0.008		0.001	0.008		-0.001	0.008		-0.001	0.008	
ATLAS Key	-0.056	0.006	***	-0.056	0.006	***	-0.056	0.006	***	-0.055	0.006	***	-0.055	0.006	***
SFA/KW	-0.010	0.006		-0.010	0.006		-0.010	0.006		-0.010	0.006		-0.010	0.006	
Accelerated Schools Project	0.017	0.008	**	0.017	0.008	**	0.017	0.008	**	0.017	0.008	**	0.017	0.008	**
Co-nect	0.008	0.007		0.008	0.007		0.008	0.007		0.008	0.007		0.008	0.007	
ELOB/TP	0.002	0.017		0.002	0.017		0.002	0.017		0.002	0.017		0.002	0.017	
MRSh	0.018	0.011		0.018	0.011		0.018	0.011		0.018	0.011		0.018	0.011	
ATLAS Communities	-0.001	0.009		-0.001	0.009		-0.001	0.009		-0.001	0.009		-0.001	0.009	
School size	0.001	0.002		0.001	0.002		0.001	0.002		0.002	0.002		0.001	0.002	
Percentage free lunch	0.001	0.001		0.001	0.001		0.001	0.001		0.001	0.001		0.001	0.001	
Percentage non-English speaking	-0.001	0.001		-0.001	0.001		-0.001	0.001		-0.001	0.001		-0.001	0.001	
School has CSR coordinator	0.002	0.003		0.002	0.003		0.002	0.003		0.002	0.003		0.002	0.003	
New principal	-0.004	0.004		-0.004	0.004		-0.004	0.004		-0.004	0.004		-0.004	0.004	

	District Base Model			Support for Comm. Outreach			Support for PD for CSR			Program Selection Support			Technical Assistance Support		
	Estimate	SE		Estimate	SE		Estimate	SE		Estimate	SE		Estimate	SE	
Usefulness of developer's information	0.008	0.001	***	0.008	0.001	***	0.008	0.001	***	0.008	0.001	***	0.008	0.001	***
Teacher community	0.010	0.002	***	0.010	0.002	***	0.001	0.002	***	0.010	0.002	***	0.010	0.002	***
Principal leadership	0.021	0.002	***	0.021	0.002	***	0.021	0.002	***	0.021	0.002	***	0.021	0.002	***
School has middle grades	-0.007	0.003	**	-0.007	0.003	**	-0.007	0.003	*	-0.007	0.003	**	-0.007	0.003	**
AYP status 2002	-0.004	0.004		-0.004	0.004		-0.004	0.004		-0.004	0.004		-0.004	0.004	
3–5 years of implementation	0.004	0.005		0.004	0.005		0.004	0.005		0.004	0.005		0.004	0.005	
5 or more years of implementation	0.000	0.006		0.000	0.006		0.000	0.006		0.001	0.006		0.000	0.006	
New teacher	-0.009	0.002	***	-0.009	0.002	***	-0.009	0.002	***	-0.009	0.002	***	-0.009	0.002	***
English teacher	-0.001	0.002		0.000	0.002		-0.001	0.002		0.000	0.002		-0.001	0.002	
Switched CSR model	-0.003	0.006		-0.003	0.006		-0.003	0.006		-0.003	0.006		-0.003	0.006	
Adopted CSR model	-0.011	0.009		-0.011	0.009		-0.012	0.009		-0.011	0.009		-0.012	0.009	
CSR model concentration	0.007	0.010		0.006	0.010		0.004	0.011		0.010	0.011		0.010	0.011	
District professional development support							0.006	0.008							
District technical assistance support													-0.010	0.017	
District CSR model selection support										-0.011	0.012				
District community outreach support				0.005	0.004										

Significance: $p < 0.1$ *; $p < 0.05$ **; $p < 0.01$ *** (two-tailed test).

Table 5.13.A. Regression results for implementation of use of assessments 2002

	District Base Model			Support for Comm. Outreach		Support for PD for CSR		Program Selection Support		Technical Assistance Support	
	Estimate	SE		Estimate	SE	Estimate	SE	Estimate	SE	Estimate	SE
Intercept	0.792	0.011	***								
Accelerated Schools Project Key	-0.011	0.007									
Co-nect Key	0.060	0.007	***								
ELOB/TP Key	0.048	0.010	***								
MRSh Key	0.030	0.010	***								
ATLAS Key	0.055	0.008	***								
SFA/KW	0.024	0.007	***								
Accelerated Schools Project	0.023	0.010	**								
Co-nect	0.000	0.009									
ELOB/TP	0.029	0.013	**								
MRSh	0.031	0.014	**								
ATLAS Communities	0.014	0.012									
School size	-0.001	0.002									
Percentage free lunch	0.001	0.002									
Percentage non-English speaking	-0.004	0.002	**								
School has CSR coordinator	0.000	0.004									
New principal	-0.005	0.004									

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	District Base Model			Support for Comm. Outreach		Support for PD for CSR		Program Selection Support		Technical Assistance Support	
	Estimate	SE		Estimate	SE	Estimate	SE	Estimate	SE	Estimate	SE
Usefulness of developer's information	0.005	0.002	***								
Teacher community	0.008	0.003	**								
Principal leadership	0.011	0.003	***								
School has middle grades	0.001	0.004									
AYP status 2002	-0.003	0.004									
3–5 years of implementation	-0.013	0.006	**								
5 or more years of implementation	-0.013	0.007	*								
New teacher	-0.008	0.003	**								
English teacher	-0.001	0.003									
Switched CSR model	0.005	0.080									
Adopted CSR model	-0.001	0.011									
CSR model concentration											
District professional development support											
District technical assistance support											
District CSR model selection support											
District community outreach support											

Significance: $p < 0.1$ *; $p < 0.05$ **; $p < 0.01$ *** (two-tailed test).

Table 5.14.A. Regression results for implementation of use of assessments 2004

	District Base Model			Support for Comm. Outreach		Support for PD for CSR		Program Selection Support		Technical Assistance Support	
	Estimate	SE		Estimate	SE	Estimate	SE	Estimate	SE	Estimate	SE
Intercept	0.845	0.005	***								
Accelerated Schools Project Key	-0.026	0.007	***								
Co-nect Key	0.060	0.007	***								
ELOB/TP Key	0.030	0.011	***								
MRSh Key	-0.010	0.012									
ATLAS Key	0.049	0.009	***								
SFA/KW	0.000	0.006									
Accelerated Schools Project	0.002	0.010									
Co-nect	-0.009	0.010									
ELOB/TP	0.013	0.015									
MRSh	0.050	0.015	***								
ATLAS Communities	-0.009	0.013									
School size	-0.006	0.002	***								
Percentage free lunch	-0.001	0.002									
Percentage non-English speaking	0.002	0.002									
School has CSR coordinator											
New principal	0.004	0.006									

	District Base Model			Support for Comm. Outreach		Support for PD for CSR		Program Selection Support		Technical Assistance Support	
	Estimate	SE		Estimate	SE	Estimate	SE	Estimate	SE	Estimate	SE
Usefulness of developer's information	0.005	0.002	***								
Teacher community	0.007	0.002	***								
Principal leadership	0.006	0.002	***								
School has middle grades	0.016	0.004	***								
AYP status 2002	0.000	0.004									
3–5 years of implementation	-0.007	0.005									
5 or more years of implementation											
New teacher	-0.001	0.004									
English teacher	0.009	0.004	**								
Switched CSR model	0.021	0.007	***								
Adopted CSR model	0.006	0.015									
CSR model concentration											
District professional development support											
District technical assistance support											
District CSR model selection support											
District community outreach support											

Significance: $p < 0.1$ *; $p < 0.05$ **; $p < 0.01$ *** (two-tailed test).

Table 5.15.A. Regression results for implementation of inclusion 2004

	District Base Model			Support for Comm. Outreach		Support for PD for CSR		Program Selection Support		Technical Assistance Support	
	Estimate	SE		Estimate	SE	Estimate	SE	Estimate	SE	Estimate	SE
Intercept	0.789	0.03	***								
Accelerated Schools Project Key	-0.065	0.018	***								
Co-nect Key	-0.039	0.018	**								
ELOB/TP Key	-0.387	0.056	***								
MRSh Key											
ATLAS Key	-0.333	0.021	***								
SFA/KW	0.006	0.018									
Accelerated Schools Project	-0.038	0.026									
Co-nect	0.013	0.025									
ELOB/TP	-0.121	0.066	***								
MRSh											
ATLAS Communities	0.057	0.036									
School size	-0.007	0.006									
Percentage free lunch	0.007	0.007									
Percentage non-English speaking	-0.026	0.005	***								
School has CSR coordinator	-0.001	0.012									
New principal	0.020	0.014									

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	District Base Model		Support for Comm. Outreach		Support for PD for CSR		Program Selection Support		Technical Assistance Support	
	Estimate	SE	Estimate	SE	Estimate	SE	Estimate	SE	Estimate	SE
Usefulness of developer's information	-0.009	0.004 **								
Teacher community	0.003	0.009								
Principal leadership	0.001	0.008								
School has middle grades	0.010	0.011								
AYP status 2002	0.023	0.011 **								
3–5 years of implementation	0.017	0.016								
5 or more years of implementation	-0.005	0.017 ***								
New teacher	0.002	0.009								
English teacher	0.007	0.008								
Switched CSR model	-0.009	0.018								
Adopted CSR model	0.012	0.039								
CSR model concentration										
District professional development support										
District technical assistance support										
District CSR model selection support										
District community outreach support										

Significance: $p < 0.1$ *; $p < 0.05$ **; $p < 0.01$ *** (two-tailed test).

Table 5.16.A. Regression results for implementation of influence of assessments 2004

	District Base Model			Support for Comm. Outreach			Support for PD for CSR			Program Selection Support			Technical Assistance Support		
	Estimate	SE		Estimate	SE		Estimate	SE		Estimate	SE		Estimate	SE	
Intercept	0.754	0.010	***	0.753	0.010	***	0.755	0.010	***	0.737	0.011	***	0.753	0.010	***
Accelerated Schools Project Key	-0.077	0.010	***	-0.07	0.010	***	-0.078	0.010	***	-0.071	0.011	***	-0.077	0.010	***
Co-nect Key	0.023	0.010	**	0.026	0.010	**	0.023	0.010	**	0.037	0.011	***	0.024	0.010	**
ELOB/TP Key	-0.079	0.030	***				-0.079	0.030	***				-0.077	0.030	***
MRSh Key	0.015	0.018		0.022	0.018		0.015	0.018		0.024	0.017		0.015	0.018	
ATLAS Key	0.024	0.012	*	0.027	0.012	**	0.024	0.012	*	0.032	0.012	***	0.024	0.012	*
SFA/KW	0.006	0.009		0.013	0.009		0.006	0.010		0.010	0.011		0.006	0.010	*
Accelerated Schools Project	-0.001	0.014		0.004	0.014		-0.001	0.014		-0.006	0.016		-0.001	0.014	
Co-nect	0.000	0.013		0.003	0.013		0.001	0.013		0.001	0.015		0.000	0.013	
ELOB/TP	0.032	0.033					0.033	0.033					0.032	0.033	
MRSh	-0.011	0.021		-0.007	0.021		-0.011	0.021		-0.016	0.021		-0.012	0.021	
ATLAS Communities	-0.002	0.018		0.003	0.018		-0.002	0.018		-0.004	0.018		-0.003	0.018	
School size	-0.006	0.003	*	-0.004	0.004		-0.006	0.004		-0.004	0.005		-0.007	0.004	**
Percentage free lunch	-0.001	0.003		-0.001	0.004		-0.001	0.003		-0.004	0.004		-0.002	0.004	
Percentage non-English speaking	-0.001	0.003		-0.001	0.003		-0.001	0.003		-0.001	0.004		-0.001	0.003	
School has CSR coordinator	0.002	0.005		0.001	0.005		0.001	0.005		0.002	0.006		0.001	0.005	
New principal	-0.008	0.007		-0.007	0.007		-0.008	0.007		-0.005	0.008		-0.009	0.007	

	District Base Model		Support for Comm. Outreach		Support for PD for CSR		Program Selection Support		Technical Assistance Support	
	Estimate	SE	Estimate	SE	Estimate	SE	Estimate	SE	Estimate	SE
Usefulness of developer's information	0.004 **	0.002	0.005 **	0.002	0.005 **	0.002	0.005 *	0.003	0.005 *	0.002
Teacher community	0.001	0.003	0.001	0.003	0.0013	0.003	0.004	0.003	0.001	0.003
Principal leadership	0.007 **	0.003	0.007 **	0.003	0.007 **	0.003	0.007 **	0.003	0.007 **	0.003
School has middle grades	0.007	0.006	0.004	0.007	0.007	0.007	0.010	0.008	0.007	0.006
AYP status 2002	-0.005	0.008	-0.005	0.008	-0.005	0.008	-0.004	0.009	-0.004	0.008
3–5 years of implementation	0.005	0.008	-0.002	0.008	0.005	0.008	0.010	0.010	0.005	0.008
5 or more years of implementation	-0.004	0.010	-0.009	0.009	-0.004	0.010	-0.005	0.010	-0.004	0.010
New teacher	-0.005	0.005	-0.006	0.005	-0.005	0.005	-0.010	0.006	-0.005	0.005
English teacher	0.026 ***	0.005	0.026 ***	0.0045	0.026 ***	0.005	0.024 ***	0.005	0.026 ***	0.005
Switched CSR model	0.010	0.010	0.011	0.010	0.010	0.010	0.008	0.012	0.010	0.010
Adopted CSR model	-0.002	0.020	-0.003	0.020	-0.002	0.020	0.001	0.020	-0.003	0.020
CSR model concentration	0.023	0.017	0.019	0.018	0.024	0.017	0.038 **	0.016	0.023 **	0.016
District professional development support					-0.001	0.005				
District technical assistance support									0.004	0.005
District CSR model selection support							-0.005	0.004		

Significance: $p < 0.1$ *; $p < 0.05$ **; $p < 0.01$ *** (two-tailed test).

Table 5.17.A. Regression results for implementation of informal professional development 2004

	District Base Model			Support for Comm. Outreach			Support for PD for CSR			Program Selection Support			Technical Assistance Support		
	Estimate	SE		Estimate	SE		Estimate	SE		Estimate	SE		Estimate	SE	
District community outreach support				-0.003	0.006										
Intercept	0.792	0.013	***	0.793	0.013	***	0.793	0.012	***				0.795	0.012	***
Accelerated Schools Project Key	-0.175	0.014	***	-0.176	0.014	***	-0.177	0.014	***				-0.174	0.014	***
Co-nect Key	-0.060	0.014	***	-0.062	0.014	***	-0.064	0.014	***				-0.067	0.014	***
ELOB/TP Key	-0.026	0.042		-0.026	0.042		-0.024	0.042					-0.029	0.042	
MRSh Key	-0.019	0.024		-0.019	0.024		-0.020	0.023					-0.020	0.023	
ATLAS Key	-0.007	0.017		-0.007	0.017		-0.007	0.017					-0.007	0.017	
SFA/KW	0.000	0.014		-0.001	0.014		-0.002	0.014					-0.003	0.014	
Accelerated Schools Project	0.029	0.020		0.029	0.020		0.028	0.020					0.030	0.020	
Co-nect	0.027	0.019		0.027	0.019		0.028	0.019					0.029	0.019	
ELOB/TP	-0.057	0.049		-0.057	0.049		-0.057	0.048					-0.057	0.048	
MRSh	-0.034	0.029		-0.034	0.029		-0.033	0.029					-0.031	0.029	
ATLAS Communities	0.003	0.026		0.004	0.026		0.006	0.026					0.006	0.026	
School size	-0.008	0.005	*	-0.006	0.005		-0.005	0.005					-0.005	0.005	
Percentage free lunch	0.000	0.004		0.000	0.005		0.001	0.004					0.002	0.005	
Percentage non-English speaking	-0.002	0.004		-0.002	0.004		-0.002	0.004					-0.002	0.004	
School has CSR coordinator	0.002	0.008		0.002	0.008		0.002	0.008					0.003	0.008	
New principal	-0.011	0.011		-0.010	0.011		-0.009	0.011					-0.009	0.011	

	District Base Model			Support for Comm. Outreach			Support for PD for CSR			Program Selection Support			Technical Assistance Support		
	Estimate	SE		Estimate	SE		Estimate	SE		Estimate	SE		Estimate	SE	
Usefulness of developer's information	0.012	0.003	***	0.012	0.003	***	0.012	0.003	***				0.012	0.003	***
Teacher community	0.012	0.004	***	0.012	0.004	***	0.012	0.004	***				0.012	0.004	***
Principal leadership	0.037	0.004	***	0.037	0.004	***	0.037	0.004	***				0.037	0.004	***
School has middle grades	0.000	0.009		-0.001	0.009		-0.001	0.009					0.001	0.009	
AYP status 2002	0.007	0.010		0.007	0.010		0.007	0.010					0.005	0.010	
3–5 years of implementation	-0.003	0.012		-0.003	0.012		-0.003	0.012					-0.005	0.012	
5 or more years of implementation	0.000	0.013		0.001	0.013		0.001	0.013					0.001	0.013	
New teacher	-0.026	0.007	***	-0.026	0.007	***	-0.027	0.007	***				-0.027	0.007	***
English teacher	0.022	0.006	***	0.022	0.006	***	0.022	0.006	***				0.022	0.006	***
Switched CSR model	-0.009	0.014		-0.010	0.014		-0.012	0.014					-0.013	0.014	
Adopted CSR model	-0.015	0.029		-0.014	0.029		-0.014	0.029					-0.012	0.029	
CSR model concentration	0.023	0.019		0.027	0.020		0.028	0.019					0.022	0.018	
District professional development support							-0.007	0.005							
District technical assistance support													-0.010	0.005	**
District CSR model selection support															
District community outreach support				-0.003	0.005										

Significance: $p < 0.1$ *; $p < 0.05$ **; $p < 0.01$ *** (two-tailed test).

Table 5.18.A. Regression results for implementation of parent–community engagement 2004

	District Base Model			Support for Comm. Outreach			Support for PD for CSR			Program Selection Support			Technical Assistance Support		
	Estimate	SE		Estimate	SE		Estimate	SE		Estimate	SE		Estimate	SE	
Intercept	0.646	0.018	***	0.646	0.018	***	0.645	0.018	***				0.643	0.018	***
Accelerated Schools Project Key	0.048	0.018	***	0.047	0.018	***	0.050	0.018	***				0.048	0.018	***
Co-nect Key	0.016	0.018		0.015	0.018		0.017	0.018					0.019	0.018	
ELOB/TP Key	0.063	0.055		0.063	0.055		0.061	0.055					0.066	0.054	
MRSh Key															
ATLAS Key	0.084	0.022	***	0.083	0.022	***	0.083	0.022	***				0.082	0.022	***
SFA/KW	0.009	0.017		0.008	0.017		0.009	0.017					0.010	0.017	
Accelerated Schools Project	0.024	0.025		0.023	0.025		0.025	0.025					0.022	0.025	
Co-nect	0.030	0.024		0.030	0.024		0.029	0.024					0.027	0.024	
ELOB/TP	0.078	0.061		0.078	0.061		0.076	0.061					0.075	0.060	
MRSh															
ATLAS Communities	0.020	0.032		0.021	0.032		0.018	0.032					0.016	0.032	
School size	0.002	0.007		0.004	0.007		-0.001	0.007					-0.001	0.007	
Percentage free lunch	-0.015	0.006	**	-0.015	0.006	**	-0.016	0.006	**				-0.017	0.006	**
Percentage non-English speaking	0.017	0.007	**	0.016	0.007	**	0.016	0.007	**				0.017	0.007	**
School has CSR coordinator	-0.004	0.010		-0.004	0.010		-0.004	0.010					-0.005	0.010	
New principal	0.003	0.013		0.004	0.013		0.002	0.013					0.002	0.013	

	District Base Model			Support for Comm. Outreach			Support for PD for CSR			Program Selection Support			Technical Assistance Support		
	Estimate	SE		Estimate	SE		Estimate	SE		Estimate	SE		Estimate	SE	
Usefulness of developer's information	0.016	0.004	***	0.016	0.004	***	0.016	0.004	***				0.016	0.004	***
Teacher community	0.009	0.004	**	0.009	0.004	**	0.009	0.004	**				0.009	0.004	**
Principal leadership	0.011	0.005	**	0.011	0.005	**	0.011	0.005	**				0.011	0.005	**
School has middle grades	-0.053	0.012	***	-0.054	0.012	***	-0.051	0.012	***				-0.051	0.012	***
AYP status 2002	-0.009	0.014		-0.009	0.014		-0.009	0.014					-0.005	0.014	
3–5 years of implementation	-0.022	0.015		-0.023	0.015		-0.022	0.015					-0.020	0.015	
5 or more years of implementation	-0.031	0.017	*	-0.030	0.017	*	-0.030	0.017	*				-0.030	0.017	*
New teacher	-0.008	0.008		-0.008	0.008		-0.008	0.008					-0.007	0.008	
English teacher	-0.002	0.007		-0.001	0.007		-0.002	0.007					-0.002	0.007	
Switched CSR model	-0.018	0.019		-0.018	0.019		-0.016	0.019					-0.017	0.019	
Adopted CSR model	0.016	0.038		0.017	0.038		0.016	0.039					0.015	0.039	
CSR model concentration	-0.010	0.032		-0.005	0.034		-0.017	0.032					-0.013	0.030	
District professional development support							0.008	0.008							
District technical assistance support													0.014	0.008	*
District CSR model selection support															
District community outreach support				-0.004	0.008										

Significance: *p* < 0.1 *; *p* < 0.05 **; *p* < 0.01 *** (two-tailed test).

Table 5.19.A. Regression results for implementation of pedagogy 2004

	District Base Model		Support for Comm. Outreach		Support for PD for CSR		Program Selection Support		Technical Assistance Support	
	Estimate	SE	Estimate	SE	Estimate	SE	Estimate	SE	Estimate	SE
Intercept	0.954***	0.007	0.956***	0.007	0.956***	0.007			0.954***	0.007
Accelerated Schools Project Key	-0.302***	0.008	-0.304***	0.008	-0.304***	0.008			-0.301***	0.008
Co-nect Key	-0.062***	0.008	-0.064***	0.008	-0.065***	0.008			-0.062***	0.008
ELOB/TP Key	-0.056***	0.020	-0.056***	0.020	-0.054***	0.020			-0.056***	0.020
MRSh Key	-0.056***	0.013	-0.056***	0.012	-0.055***	0.012			-0.056***	0.013
ATLAS Key	-0.071***	0.009	-0.072*** *	0.009	-0.070***	0.009			-0.071***	0.009
SFA/KW	0.001	0.008	-0.001	0.008	-0.002	0.008			0.001	0.008
Accelerated Schools Project	-0.001	0.010	-0.001	0.010	-0.002	0.010			-0.001	0.010
Co-nect	-0.005	0.009	-0.005	0.009	-0.004	0.009			-0.005	0.009
ELOB/TP	-0.009	0.022	-0.009	0.022	-0.009	0.022			-0.009	0.022
MRSh	-0.001	0.014	-0.001	0.014	0.001	0.014			-0.0003	0.014
ATLAS Communities	-0.014	0.013	-0.013	0.013	-0.012	0.013			-0.014	0.013
School size	-0.003	0.002	-0.002	0.003	-0.001	0.003			-0.003	0.003
Percentage free lunch	0.001	0.002	0.002	0.002	0.003	0.002			0.002	0.003
Percentage non-English speaking	-0.004	0.003	-0.004	0.003	-0.004	0.003			-0.004	0.003
School has CSR coordinator	0.005	0.004	0.005	0.004	0.005	0.004			0.005	0.004
New principal	-0.011*	0.006	-0.010*	0.006	-0.009	0.006			-0.010*	0.006

	District Base Model			Support for Comm. Outreach			Support for PD for CSR			Program Selection Support		Technical Assistance Support		
	Estimate	SE		Estimate	SE		Estimate	SE		Estimate	SE	Estimate	SE	
Usefulness of developer's information	0.002	0.002		0.002	0.002		0.002	0.002				0.002	0.002	
Teacher community	0.005	0.002	**	0.005	0.002	**	0.005	0.002	**			0.005	0.002	**
Principal leadership	-0.007	0.002	***	-0.007	0.002	***	-0.007	0.002	***			-0.007	0.002	***
School has middle grades	0.001	0.005		0.000	0.005		0.000	0.005				0.001	0.005	
AYP status 2002	-0.004	0.005		-0.005	0.005		-0.003	0.005				-0.005	0.005	
3–5 years of implementation	-0.006	0.007		-0.007	0.007		-0.007	0.006				-0.007	0.007	
5 or more years of implementation	-0.004	0.008		-0.003	0.008		-0.003	0.008				-0.004	0.008	
New teacher	-0.001	0.004		-0.002	0.004		-0.003	0.004				-0.007	0.004	
English teacher	0.064	0.004	***	0.064	0.004	***	0.064	0.004	***			0.064	0.004	***
Switched CSR model	0.006	0.008		0.005	0.008		0.006	0.007				0.006	0.008	
Adopted CSR model	0.007	0.015		0.009	0.015		0.009	0.015				0.008	0.015	
CSR model concentration	0.017	0.010		0.020	0.010	*	0.019	0.009	**			0.017	0.010	
District professional development support							-0.006	0.002	**					
District technical assistance support												-0.001	0.003	
District CSR model selection support														
District community outreach support				-0.004	0.003									

Significance: $p < 0.1$ *; $p < 0.05$ **; $p < 0.01$ *** (two-tailed test).

Table 5.20.A. Regression results for implementation of instructional time 2004

	District Base Model			Support for Comm. Outreach			Support for PD for CSR			Program Selection Support			Technical Assistance Support		
	Estimate	SE		Estimate	SE		Estimate	SE		Estimate	SE		Estimate	SE	
Intercept	0.912	0.011	***	0.911	0.011	***	0.911	0.010	***	0.922	0.012	***	0.910	0.010	***
Accelerated Schools Project Key	0.024	0.011	**	0.025	0.011	**	0.027	0.011	**	0.019	0.013		0.024	0.011	**
Co-nect Key	-0.427	0.011	***	-0.427	0.011	***	-0.427	0.011	***	-0.431	0.013	***	-0.426	0.011	***
ELOB/TP Key	-0.082	0.018	***	-0.081	0.018	***	-0.079	0.018	***	-0.148	0.055	***	-0.075	0.018	***
MRSh Key	0.001	0.019		0.001	0.019		0.001	0.019		0.008	0.019		0.001	0.019	
ATLAS Key	-0.001	0.014		-0.001	0.014		-0.002	0.014		-0.002	0.014		-0.002	0.013	
SFA/KW	0.010	0.010		0.010	0.010		0.011	0.010		0.010	0.012		0.011	0.010	
Accelerated Schools Project	0.002	0.015		0.003	0.015		0.003	0.015		0.002	0.018		0.002	0.015	
Co-nect	0.038	0.015	**	0.038	0.015	**	0.037	0.015	**	0.040	0.017	**	0.037	0.015	**
ELOB/TP	0.007	0.023		0.007	0.023		0.007	0.023		0.108	0.093		0.007	0.023	
MRSh	0.034	0.022		0.035	0.022		0.034	0.022		0.034	0.023		0.033	0.022	
ATLAS Communities	-0.014	0.020		-0.014	0.020		-0.015	0.020		-0.014	0.020		-0.016	0.020	
School size	-0.009	0.004	**	-0.010	0.004	**	-0.011	0.004	***	-0.009	0.006		-0.012	0.004	***
Percentage free lunch	-0.004	0.004		-0.004	0.004		-0.005	0.004		-0.006	0.004		-0.005	0.004	
Percentage non-English speaking	0.004	0.004		0.004	0.004		0.004	0.004		0.001	0.004		0.004	0.004	
School has CSR coordinator	0.005	0.006		0.005	0.006		0.005	0.006		0.003	0.007		0.004	0.006	
New principal	0.009	0.008		0.009	0.008		0.009	0.008		0.017	0.009	*	0.009	0.008	

	District Base Model			Support for Comm. Outreach			Support for PD for CSR			Program Selection Support			Technical Assistance Support		
	Estimate	SE		Estimate	SE		Estimate	SE		Estimate	SE		Estimate	SE	
Usefulness of developer's information	0.004	0.002	*	0.004	0.002	*	0.004	0.002	*	0.005	0.003	**	0.004	0.002	*
Teacher community	0.001	0.003		0.001	0.003		0.001	0.003		-0.002	0.003		0.001	0.003	
Principal leadership	0.002	0.003		0.002	0.003		0.002	0.003		0.006	0.003	*	0.002	0.003	
School has middle grades	-0.018	0.007	**	-0.017	0.007	**	-0.016	0.007	**	-0.021	0.009	**	-0.017	0.007	**
AYP status 2002	0.002	0.008		0.002	0.008		0.002	0.008		-0.004	0.010		0.004	0.008	
3–5 years of implementation	-0.004	0.009		-0.004	0.009		-0.004	0.009		-0.008	0.011		-0.002	0.009	
5 or more years of implementation	0.002	0.010		0.002	0.010		0.002	0.010		-0.004	0.012		0.002	0.010	
New teacher	-0.008	0.005		-0.008	0.005		-0.007	0.005		-0.007	0.006		-0.007	0.005	
English teacher	-0.002	0.004		-0.002	0.004		-0.002	0.004		-0.001	0.005		-0.002	0.004	
Switched CSR model	0.013	0.011		0.013	0.011		0.014	0.011		0.018	0.013		0.014	0.011	
Adopted CSR model	0.014	0.023		0.013	0.023		0.012	0.023		0.006	0.024		0.011	0.023	
CSR model concentration	0.009	0.017		0.006	0.018		0.002	0.017		-0.015	0.019		0.005	0.016	
District professional development support							0.006	0.004							
District technical assistance support													0.009	0.004	**
District CSR model selection support										0.006	0.005				
District community outreach support				0.002	0.005										

Significance: $p < 0.1$ *; $p < 0.05$ **; $p < 0.01$ *** (two-tailed test).

Table 5.21.A. Regression results for implementation of shared decision making 2004

	District Base Model			Support for Comm. Outreach			Support for PD for CSR			Program Selection Support			Technical Assistance Support		
	Estimate	SE		Estimate	SE		Estimate	SE		Estimate	SE		Estimate	SE	
Intercept	0.650	0.017	***	0.650	0.017	***	0.649	0.017	***	0.643	0.022	***	0.650	0.016	***
Accelerated Schools Project Key	-0.107	0.016	***	-0.108	0.016	***	-0.109	0.016	***	-0.127	0.018	***	-0.106	0.016	***
Co-nect Key	-0.042	0.016	***	-0.043	0.016	***	-0.044	0.016	***	-0.035	0.018	*	-0.044	0.016	***
ELOB/TP Key	0.082	0.026	***	0.079	0.026	***	0.079	0.026	***	-0.012	0.079		0.077	0.026	***
MRSh Key	-0.002	0.027		-0.002	0.027		-0.003	0.027		-0.015	0.028		-0.002	0.027	
ATLAS Key	-0.056	0.019	***	-0.057	0.020	***	-0.057	0.019	***	-0.062	0.020	***	-0.057	0.019	***
SFA/KW	0.008	0.015		0.007	0.015		0.007	0.015		-0.005	0.017		0.007	0.015	
Accelerated Schools Project	0.018	0.022		0.017	0.022		0.016	0.022		0.022	0.026		0.018	0.022	
Co-nect	0.004	0.020		0.004	0.020		0.004	0.020		0.002	0.023		0.004	0.020	
ELOB/TP	-0.080	0.032	**	-0.079	0.032	**	-0.079	0.032	**	-0.349	0.131	***	-0.079	0.032	**
MRSh	0.036	0.031		0.035	0.031		0.036	0.031		0.031	0.032		0.036	0.031	
ATLAS Communities	-0.024	0.028		-0.024	0.028		-0.023	0.028		-0.032	0.028		-0.024	0.028	
School size	0.010	0.006	*	0.012	0.006	*	0.012	0.006	**	0.005	0.009		0.011	0.006	*
Percentage free lunch	0.001	0.005		0.001	0.005		0.001	0.005		0.002	0.005		0.002	0.005	
Percentage non-English speaking	0.003	0.005		0.003	0.005		0.004	0.005		0.004	0.006		0.003	0.005	
School has CSR coordinator	0.008	0.008		0.008	0.008		0.008	0.008		0.008	0.010		0.009	0.008	
New principal	-0.006	0.011		-0.006	0.011		-0.005	0.011		-0.007	0.012		-0.006	0.011	

	District Base Model			Support for Comm. Outreach			Support for PD for CSR			Program Selection Support			Technical Assistance Support		
	Estimate	SE		Estimate	SE		Estimate	SE		Estimate	SE		Estimate	SE	
Usefulness of developer's information	0.006	0.003	*	0.006	0.003	*	0.006	0.003	*	0.007	0.004	*	0.006	0.003	*
Teacher community	0.002	0.004		0.002	0.004		0.002	0.004		0.004	0.004		0.002	0.004	
Principal leadership	0.036	0.004	***	0.036	0.004	***	0.036	0.004	***	0.038	0.005	***	0.036	0.004	***
School has middle grades	-0.012	0.010		-0.013	0.010		-0.013	0.010		-0.007	0.012		-0.011	0.010	
AYP status 2002	-0.001	0.012		-0.001	0.012		-0.001	0.012		0.016	0.016		-0.003	0.012	
3–5 years of implementation	-0.011	0.012		-0.014	0.012		-0.010	0.012		0.000	0.017		-0.011	0.013	
5 or more years of implementation	-0.029	0.015	**	-0.028	0.015	*	-0.029	0.015	**	-0.016	0.017		-0.029	0.015	**
New teacher	-0.009	0.007		-0.009	0.007		-0.009	0.007		-0.008	0.008		-0.009	0.007	
English teacher	0.008	0.006		0.008	0.006		0.008	0.006		0.011	0.007		0.008	0.006	
Switched CSR model	0.011	0.015		0.010	0.015		0.010	0.015		0.009	0.019		0.010	0.015	
Adopted CSR model	0.003	0.032		0.004	0.032		0.004	0.032		0.016	0.033		0.004	0.032	
CSR model concentration	0.004	0.028		0.012	0.030		0.012	0.029		0.028	0.038		0.006	0.028	
District professional development support							-0.009	0.009							
District technical assistance support													-0.008	0.008	
District CSR model selection support										0.002	0.012				
District community outreach support				-0.007	0.009										

Significance: $p < 0.1$ *; $p < 0.05$ **; $p < 0.01$ *** (two-tailed test).

Table 5.22.A. Regression results for implementation of student grouping 2004

	District Base Model			Support for Comm. Outreach			Support for PD for CSR			Program Selection Support			Technical Assistance Support		
	Estimate	SE		Estimate	SE		Estimate	SE		Estimate	SE		Estimate	SE	
Intercept	0.935	0.013	***	0.935	0.013	***	0.934	0.013	***	0.932	0.016	***	0.933	0.013	***
Accelerated Schools Project Key	-0.093	0.014	***	-0.092	0.015	***	-0.091	0.015	***	-0.097	0.017	***	-0.093	0.014	***
Co-nect Key	-0.140	0.015	***	-0.139	0.015	***	-0.138	0.015	***	-0.143	0.017	***	-0.136	0.015	***
ELOB/TP Key	-0.010	0.023		-0.007	0.024		-0.006	0.024		0.022	0.075		-0.002	0.024	
MRSh Key	-0.044	0.025	*	-0.044	0.025	*	-0.044	0.025	*	-0.044	0.025		-0.044	0.025	*
ATLAS Key	-0.027	0.018		-0.026	0.018		-0.026	0.018		-0.026	0.018		-0.026	0.018	
SFA/KW	-0.005	0.014		-0.005	0.014		-0.004	0.014		0.000	0.016		-0.004	0.014	
Accelerated Schools Project	0.032	0.020		0.032	0.020		0.033	0.020		0.029	0.024		0.032	0.020	
Co-nect	0.049	0.020	**	0.048	0.020	**	0.048	0.020	**	0.049	0.022	**	0.047	0.020	**
ELOB/TP	-0.001	0.030		-0.011	0.030		-0.011	0.030		0.025	0.134		-0.012	0.030	
MRSh	-0.009	0.030		-0.009	0.030		-0.010	0.030		-0.011	0.030		-0.010	0.030	
ATLAS Communities	0.020	0.027		0.020	0.027		0.019	0.027		0.017	0.027		0.018	0.027	
School size	0.000	0.004		-0.001	0.005		-0.002	0.005		-0.007	0.008		-0.003	0.005	
Percentage free lunch	-0.004	0.005		-0.004	0.006		-0.004	0.006		-0.006	0.007		-0.005	0.006	
Percentage non-English speaking	0.000	0.005		0.000	0.005		0.000	0.005		-0.001	0.006		0.000	0.005	
School has CSR coordinator	0.008	0.008		0.008	0.008		0.008	0.008		0.011	0.009		0.007	0.008	
New principal	0.013	0.011		0.012	0.011		0.012	0.011		0.014	0.012		0.012	0.011	

	District Base Model			Support for Comm. Outreach			Support for PD for CSR			Program Selection Support			Technical Assistance Support		
	Estimate	SE		Estimate	SE		Estimate	SE		Estimate	SE		Estimate	SE	
Usefulness of developer's information	0.001	0.003		0.001	0.003		0.001	0.003		-0.003	0.004		0.001	0.003	
Teacher community	-0.001	0.004		-0.001	0.004		-0.001	0.004		-0.001	0.005		-0.001	0.004	
Principal leadership	0.010	0.004	**	0.010	0.004	**	0.010	0.004	**	0.010	0.005	**	0.010	0.004	**
School has middle grades	0.000	0.009		0.000	0.009		0.001	0.009		0.001	0.012		0.000	0.009	
AYP status 2002	-0.007	0.010		-0.007	0.010		-0.007	0.010		-0.004	0.014		-0.005	0.010	
3–5 years of implementation	-0.006	0.012		-0.006	0.012		-0.006	0.012		-0.007	0.015		-0.005	0.012	
5 or more years of implementation	0.016	0.014		0.015	0.014		0.015	0.014		0.008	0.016		0.015	0.014	
New teacher	-0.007	0.008		-0.006	0.008		-0.006	0.008		-0.005	0.009		-0.006	0.008	
English teacher	-0.022	0.006	***	-0.022	0.006	***	-0.022	0.006	***	-0.021	0.007	***	-0.022	0.006	***
Switched CSR model	-0.020	0.014		-0.020	0.014		-0.019	0.014		-0.014	0.017		-0.018	0.014	
Adopted CSR model	-0.052	0.030	*	-0.053	0.030	*	-0.053	0.030	*	-0.057	0.031	*	-0.055	0.030	*
CSR model concentration	0.026	0.020		0.022	0.022		0.022	0.020		0.017	0.025		0.025	0.020	
District professional development support							0.005	0.006							
District technical assistance support													0.008	0.006	
District CSR model selection support										0.006	0.006				
District community outreach support				0.003	0.006										

Significance: $p < 0.1$ *; $p < 0.05$ **; $p < 0.01$ *** (two-tailed test).

Table 5.23.A. Regression results for implementation of use of technology in classrooms 2004

	District Base Model			Support for Comm. Outreach			Support for PD for CSR			Program Selection Support			Technical Assistance Support		
	Estimate	SE		Estimate	SE		Estimate	SE		Estimate	SE		Estimate	SE	
Intercept	0.441	0.040	***	0.442	0.068	***	0.450	0.052	***	0.597	0.106	***	0.395	0.053	***
Accelerated Schools Project Key	-0.033	0.025		-0.033	0.025		-0.034	0.025		-0.042	0.028		-0.034	0.024	
Co-nect Key	0.002	0.024		0.002	0.025		0.001	0.024		0.007	0.029		0.006	0.024	
ELOB/TP Key	0.001	0.040		0.001	0.040		0.000	0.040		-0.008	0.121		0.010	0.040	
MRSh Key															
ATLAS Key	-0.006	0.030		-0.005	0.030		-0.006	0.030		-0.012	0.032		-0.007	0.030	
SFA/KW	-0.001	0.023		0.000	0.023		-0.001	0.023		0.010	0.027		0.002	0.023	
Accelerated Schools Project	0.014	0.034		0.014	0.034		0.013	0.034		0.019	0.041		0.015	0.033	
Co-nect	0.031	0.032		0.031	0.032		0.031	0.032		0.009	0.037		0.029	0.032	
ELOB/TP	-0.053	0.049		-0.053	0.049		-0.053	0.049		-0.310	0.199	***	-0.055	0.049	
MRSh															
ATLAS Communities	-0.001	0.043		-0.001	0.043		-0.001	0.043		-0.003	0.044		-0.003	0.043	
School size	-0.014	0.009		-0.014	0.010		-0.013	0.010		-0.007	0.015	***	-0.018	0.009	*
Percentage free lunch	0.003	0.008		0.003	0.009		0.003	0.008		-0.005	0.010		0.001	0.009	
Percentage non-English speaking	-0.005	0.007		-0.005	0.007		-0.005	0.007		-0.001	0.008		-0.004	0.007	
School has CSR coordinator	-0.012	0.015		-0.013	0.015		-0.013	0.015		-0.018	0.018		-0.012	0.015	
New principal	-0.028	0.018		-0.028	0.018		-0.028	0.018		-0.006	0.020		-0.028	0.018	

	District Base Model			Support for Comm. Outreach			Support for PD for CSR			Program Selection Support			Technical Assistance Support		
	Estimate	SE		Estimate	SE		Estimate	SE		Estimate	SE		Estimate	SE	
Usefulness of developer's information	0.010	0.005	**	0.011	0.005	**	0.010	0.005	**	0.010	0.006	*	0.010	0.005	**
Teacher community	0.018	0.010	*	0.018	0.010	*	0.018	0.010	*	0.026	0.012	**	0.018	0.010	*
Principal leadership	0.025	0.009	***	0.025	0.009	***	0.025	0.009	***	0.017	0.012		0.025	0.009	***
School has middle grades	-0.009	0.016		-0.009	0.016		-0.009	0.016		-0.029	0.021		-0.009	0.016	
AYP status 2002	-0.007	0.018		-0.007	0.018		-0.007	0.018		-0.011	0.026		-0.004	0.018	
3–5 years of implementation	-0.021	0.020		-0.021	0.020		-0.021	0.020		-0.032	0.024		-0.020	0.020	
5 or more years of implementation	-0.021	0.023		-0.021	0.023		-0.021	0.023		-0.014	0.027		-0.022	0.023	
New teacher	-0.026	0.011	**	-0.026	0.011	**	-0.026	0.011	**	-0.015	0.013		-0.026	0.011	**
English teacher	0.029	0.009	***	0.029	0.009	***	0.029	0.009	***	0.016	0.010		0.029	0.009	***
Switched CSR model	0.003	0.025		0.003	0.025		0.002	0.025		0.028	0.032		0.005	0.025	
Adopted CSR model	0.006	0.053		0.006	0.053		0.006	0.053		0.021	0.055		0.005	0.052	
CSR model concentration	0.049	0.044		0.049	0.047		0.052	0.045		0.068	0.052		0.046	0.043	
District professional development support							-0.011	0.040							
District technical assistance support													0.050	0.039	
District CSR model selection support										-0.169	0.110				
District community outreach support	-0.0003	0.020													

Significance: $p < 0.1$ *; $p < 0.05$ **; $p < 0.01$ *** (two-tailed test).

Table 5.24.A. Regression results for total level of implementation 2004

	District Base Model			Support for Comm. Outreach			Support for PD for CSR			Program Selection Support			Technical Assistance Support		
	Estimate	SE		Estimate	SE		Estimate	SE		Estimate	SE		Estimate	SE	
Intercept	0.653	0.005	***	0.653	0.005	***	0.653	0.005	***	0.649	0.005	***	0.652	0.005	***
Accelerated Schools Project Key	-0.083	0.005	***	-0.084	0.005	***	-0.084	0.005	***	-0.095	0.006	***	-0.083	0.005	***
Co-nect Key	-0.035	0.005	***	-0.036	0.005	***	-0.036	0.005	***	-0.038	0.006	***	-0.035	0.005	***
ELOB/TP Key	0.001	0.016		0.001	0.016		0.002	0.016					0.002	0.016	
MRSh Key	-0.002	0.009		-0.002	0.009		-0.002	0.009		-0.006	0.009		-0.003	0.009	
ATLAS Key	-0.021	0.006	***	-0.021	0.007	***	-0.021	0.006	***	-0.026	0.006	***	-0.021	0.006	***
SFA/KW	0.005	0.005		0.004	0.005		0.004	0.005		0.000	0.006		0.005	0.005	
Accelerated Schools Project	0.007	0.007		0.007	0.007		0.006	0.007		0.015	0.008	*	0.007	0.007	*
Co-nect	0.017	0.007	**	0.017	0.007	**	0.017	0.007	**	0.014	0.008	*	0.016	0.007	*
ELOB/TP	-0.007	0.018		-0.006	0.018		-0.006	0.018					-0.007	0.018	
MRSh	0.015	0.011		0.015	0.011		0.015	0.011		0.016	0.010		0.015	0.011	
ATLAS Communities	0.007	0.009		0.007	0.009		0.008	0.009		0.005	0.009		0.007	0.009	
School size	-0.003	0.002		-0.002	0.002		-0.002	0.002		-0.003	0.003		-0.003	0.002	
Percentage free lunch	-0.001	0.001		-0.001	0.002		-0.001	0.002		-0.002	0.002		-0.001	0.002	
Percentage non-English speaking	0.001	0.002		0.001	0.002		0.001	0.002		0.001	0.002		0.001	0.002	
School has CSR coordinator	0.001	0.003		0.001	0.003		0.001	0.003		0.000	0.003		0.001	0.003	
New principal	-0.002	0.004		-0.002	0.004		-0.002	0.004		0.001	0.004		-0.002	0.004	

	District Base Model			Support for Comm. Outreach			Support for PD for CSR			Program Selection Support			Technical Assistance Support		
	Estimate	SE		Estimate	SE		Estimate	SE		Estimate	SE		Estimate	SE	
Usefulness of developer's information	0.006	0.001	***	0.006	0.001	***	0.006	0.001	***	0.005	0.001	***	0.005	0.001	***
Teacher community	0.005	0.001	***	0.005	0.001	***	0.005	0.001	***	0.004	0.002	***	0.005	0.001	***
Principal leadership	0.013	0.001	***	0.013	0.001	***	0.013	0.001	***	0.015	0.002	***	0.013	0.001	***
School has middle grades	-0.002	0.003		-0.003	0.003		-0.003	0.003		-0.003	0.004		-0.002	0.003	
AYP status 2002	-0.003	0.004		-0.003	0.004		-0.003	0.004		0.006	0.005		-0.002	0.004	
3–5 years of implementation	-0.005	0.004		-0.005	0.004		-0.005	0.004		-0.005	0.005		-0.005	0.004	
5 or more years of implementation	-0.009	0.005	*	-0.009	0.005	*	-0.009	0.005	*	-0.006	0.005		-0.009	0.005	*
New teacher	-0.009	0.003	***	-0.009	0.003	***	-0.009	0.003	***	-0.008	0.003	**	-0.009	0.003	***
English teacher	0.004	0.002	*	0.004	0.002	**	0.004	0.002	*	0.002	0.002		0.004	0.002	*
Switched CSR model	-0.006	0.005		-0.006	0.005		-0.006	0.005		-0.006	0.006		-0.006	0.005	
Adopted CSR model	-0.006	0.011		-0.005	0.011		-0.006	0.011		-0.005	0.011		-0.006	0.011	
CSR model concentration	0.017	0.008	**	0.020	0.008	**	0.019	0.008	**	0.026	0.008	***	0.017	0.008	**
District professional development support							-0.002	0.002							
District technical assistance support													0.001	0.002	
District CSR model selection support										0.003	0.002				
District community outreach support				-0.002	0.002										

Significance: $p < 0.1$ *; $p < 0.05$ **; $p < 0.01$ *** (two-tailed test).

Table 5.25.A. Regression results for implementation of type and emphasis of professional development 2004

	District Base Model			Support for Comm. Outreach			Support for PD for CSR			Program Selection Support			Technical Assistance Support		
	Estimate	SE		Estimate	SE		Estimate	SE		Estimate	SE		Estimate	SE	
Intercept	0.695	0.014	***	0.693	0.014	***	0.695	0.014	***	0.696	0.017	***	0.694	0.014	***
Accelerated Schools Project Key	0.003	0.017		0.006	0.017		0.005	0.017		-0.005	0.019		0.002	0.017	
Co-nect Key	0.021	0.017		0.024	0.017		0.024	0.017		0.023	0.020		0.024	0.017	
ELOB/TP Key	-0.047	0.026	*	-0.040	0.027		-0.042	0.027		0.077	0.085		-0.039	0.027	
MRSh Key	-0.012	0.027		-0.012	0.027		-0.011	0.027		-0.007	0.029		-0.012	0.027	
ATLAS Key	-0.038	0.020	*	-0.036	0.020	*	-0.038	0.02	*	-0.039	0.021	*	-0.038	0.020	*
SFA/KW	0.015	0.016		0.017	0.016		0.016	0.016		0.017	0.019		0.016	0.016	
Accelerated Schools Project	0.023	0.023		0.024	0.023		0.024	0.023		0.041	0.028		0.023	0.023	
Co-nect	0.034	0.022		0.033	0.022		0.033	0.022		0.029	0.026		0.033	0.022	
ELOB/TP	0.020	0.035		0.018	0.035		0.019	0.035		-0.062	0.145		0.018	0.035	
MRSh	0.012	0.034		0.014	0.034		0.012	0.034		0.010	0.035		0.012	0.034	
ATLAS Communities	0.046	0.030		0.045	0.030		0.045	0.030		0.047	0.031		0.045	0.030	
School size	0.003	0.005		0.000	0.006		0.001	0.006		-0.004	0.009		0.001	0.006	
Percentage free lunch	0.008	0.005		0.007	0.005		0.007	0.005		0.005	0.006		0.006	0.005	
Percentage non-English speaking	-0.008	0.006		-0.008	0.006		-0.008	0.006		-0.010	0.007		-0.008	0.006	
School has CSR coordinator	0.006	0.009		0.007	0.009		0.006	0.009		-0.002	0.011		0.006	0.009	
New principal	-0.005	0.012		-0.006	0.012		-0.006	0.012		0.007	0.013		-0.006	0.012	

	District Base Model			Support for Comm. Outreach			Support for PD for CSR			Program Selection Support			Technical Assistance Support		
	Estimate	SE		Estimate	SE		Estimate	SE		Estimate	SE		Estimate	SE	
Usefulness of developer's information	0.0140	0.003	***	0.014	0.003	***	0.014	0.003	***	0.012	0.004	***	0.014	0.003	***
Teacher community	0.010	0.004	**	0.010	0.004	**	0.010	0.004	**	0.010	0.005	**	0.010	0.004	**
Principal leadership	0.037	0.004	***	0.037	0.004	***	0.037	0.004	***	0.038	0.005	***	0.038	0.004	***
School has middle grades	0.012	0.010		0.013	0.010		0.012	0.010		0.023	0.013	*	0.011	0.010	
AYP status 2002	0.003	0.011		0.003	0.011		0.003	0.011		0.000	0.015		0.004	0.011	
3–5 years of implementation	-0.016	0.013		-0.016	0.013		-0.016	0.013		-0.021	0.016		-0.015	0.013	
5 or more years of implementation	-0.014	0.015		-0.016	0.015		-0.015	0.015		0.003	0.018		-0.015	0.015	
New teacher	-0.025	0.008	***	-0.025	0.008	***	-0.025	0.008	***	-0.020	0.009	**	-0.025	0.008	***
English teacher	0.052	0.007		0.051	0.007	***	0.051	0.007	***	0.044	0.008	***	0.051	0.007	***
Switched CSR model	-0.032	0.016	**	-0.030	0.016	**	-0.030	0.016	*	-0.058	0.020	***	-0.030	0.016	*
Adopted CSR model	-0.063	0.034	*	-0.065	0.034	*	-0.064	0.034	*	-0.051	0.035		-0.064	0.034	*
CSR model concentration	0.063	0.022	***	0.056	0.022	**	0.059	0.022	***	0.064	0.028	**	0.063	0.021	***
District professional development support							0.005	0.005							
District technical assistance support													0.005	0.006	
District CSR model selection support										0.005	0.007				
District community outreach support				0.006	0.006										

Significance: $p < 0.1$ *; $p < 0.05$ **; $p < 0.01$ *** (two-tailed test).

Table 5.26.A. Regression results for implementation of curriculum 2004

	District Base Model			Support for Comm. Outreach		Support for PD for CSR		Program Selection Support		Technical Assistance Support	
	Estimate	SE		Estimate	SE	Estimate	SE	Estimate	SE	Estimate	SE
Intercept	0.795	0.010	***								
Accelerated Schools Project Key	-0.029	0.013	**								
Co-nect Key	0.030	0.013	**								
ELOB/TP Key	-0.047	0.033									
MRSh Key	0.037	0.024									
ATLAS Key											
SFA/KW	0.007	0.014									
Accelerated Schools Project	-0.008	0.017									
Co-nect	0.009	0.016									
ELOB/TP	0.053	0.039									
MRSh	0.028	0.029									
ATLAS Communities											
School size	-0.015	0.004	***								
Percentage free lunch	0.000	0.004									
Percentage non-English speaking	0.005	0.005									
School has CSR coordinator	-0.007	0.007									
New principal	0.005	0.010									

	District Base Model			Support for Comm. Outreach		Support for PD for CSR		Program Selection Support		Technical Assistance Support	
	Estimate	SE		Estimate	SE	Estimate	SE	Estimate	SE	Estimate	SE
Usefulness of developer's information	0.001	0.003									
Teacher community	0.011	0.004	***								
Principal leadership	0.002	0.004									
School has middle grades	-0.013	0.008									
AYP status 2002	0.002	0.007									
3–5 years of implementation	0.007	0.011									
5 or more years of implementation	0.016	0.013									
New teacher	-0.009	0.070									
English teacher	0.092	0.008	***								
Switched CSR model	-0.030	0.013	**								
Adopted CSR model	-0.026	0.028									
CSR model concentration											
District professional development support											
District technical assistance support											
District CSR model selection support											
District community outreach support											

Significance: $p < 0.1$ *; $p < 0.05$ **; $p < 0.01$ *** (two-tailed test).

Table 5.27.A. Change in implementation between 2002 and 2004

	District Base Model			Support for Comm. Outreach			Support for PD for CSR			Program Selection Support			Technical Assistance Support	
	Estimate	SE		Estimate	SE		Estimate	SE		Estimate	SE		Estimate	SE
Intercept	0.018	0.008	**	-0.065	0.026	**	0.054	0.025	**	-0.020	0.032			
Accelerated Schools Project Key	-0.002	0.008		-0.015	0.027		-0.009	0.025		0.222	0.032	***		
Co-nect Key	0.000	0.007		0.042	0.025	*	0.029	0.022		0.010	0.028			
ELOB/TP Key	0.006	0.019		0.128	0.039	***	0.052	0.054		0.274	0.100	***		
MRSh Key	0.012	0.013		0.072	0.042	*								
ATLAS Key	0.033	0.008	***	0.218	0.029	***	0.000	0.025		0.161	0.033	***		
SFA/KW	0.010	0.008		-0.009	0.025		0.038	0.023	*	0.003	0.030			
Accelerated Schools Project	-0.021	0.011	**	-0.001	0.035		0.005	0.031		-0.091	0.041	**		
Co-nect	0.014	0.011		0.004	0.036		0.062	0.032	*	0.010	0.041			
ELOB/TP	-0.018	0.023		-0.097	0.051	*	0.013	0.066		-0.057	0.122			
MRSh	-0.014	0.017		0.008	0.055									
ATLAS Communities	0.010	0.014		0.006	0.045		0.049	0.041		0.029	0.059			
Medium level of implementation in 2002	-0.017	0.006	***	-0.004	0.019		-0.041	0.019	**	0.015	0.024			
High level of implementation in 2002	-0.029	0.007	***	-0.002	0.022		-0.037	0.022	*	-0.013	0.028			
School has a CSR coordinator	0.000	0.004		0.019	0.013		0.006	0.012		0.010	0.017			
School size (average 2002/2004)	-0.002	0.002		0.001	0.008		0.008	0.006		-0.012	0.008			
Percentage Free Lunch (average 2002/2004)	-0.001	0.002		-0.009	0.007		0.004	0.006		-0.003	0.009			

	District Base Model			Support for Comm. Outreach			Support for PD for CSR			Program Selection Support			Technical Assistance Support	
	Estimate	SE		Estimate	SE		Estimate	SE		Estimate	SE		Estimate	SE
Percentage non-English speaking (average 2002/2004)	0.001	0.002		0.008	0.007		0.008	0.007		-0.013	0.009			
New principal	-0.008	0.005		-0.023	0.017		0.005	0.016		0.003	0.022			
School has middle grades	0.006	0.004		0.003	0.014		-0.013	0.014		0.013	0.018			
AYP status 2002	-0.007	0.004		-0.018	0.014		0.009	0.013		0.024	0.017			
3–5 years of implementation	-0.004	0.007		0.007	0.021		0.008	0.020		0.035	0.027			
5 or more years of implementation	0.002	0.007		-0.022	0.024		-0.007	0.022		0.013	0.028			
Teacher community	-0.002	0.003		-0.015	0.008	*	-0.012	0.008		0.000	0.011			
Change in teacher community	-0.001	0.002		0.001	0.006		0.013	0.006	**	-0.006	0.008			
Principal leadership	0.003	0.003		0.007	0.008		-0.006	0.008		0.003	0.011			
Change in leadership	0.012	0.002	***	0.028	0.006	***	0.006	0.006		0.020	0.009	**		
Usefulness of developer's information	0.001	0.002		-0.007	0.006		0.000	0.006		0.006	0.008			
Change in usefulness of developer's information	0.004	0.001	***	0.006	0.004		0.011	0.004	***	-0.007	0.005			
New teacher	0.000	0.004		-0.0004	0.013		-0.002	0.013		-0.002	0.017			
English teachers	0.003	0.004		0.03	0.011	***	0.001	0.011		-0.061	0.015	***		
Switched CSR models	0.005	0.007		-0.011	0.024		0.003	0.023		0.019	0.029			
Adopted CSR model	-0.008	0.015		-0.119	0.051	**	0.039	0.045		0.095	0.063			

Significance: p < 0.1 *; p < 0.05 **; p < 0.01 *** (two-tailed test).

Table 6.1.A. Descriptive properties of variables used in the social capital analyses

Variable	N	Mean	SD	Minimum	Maximum
Collective commitment 2004	317	3.19	0.35	1.80	4.00
Professional Learning Community 2004	312	3.01	0.53	1.20	4.53
Change in math achievement 2001–2002	321	0.01	0.63	-2.43	2.60
Change in reading achievement 2001–2002	322	0.02	0.59	-2.46	1.90
Collective commitment 2002	322	3.20	0.33	2.12	4.00
Professional Learning Community 2002	322	2.87	0.49	1.40	4.40
Math achievement 2001	322	-0.22	0.81	-2.68	2.78
Reading achievement 2001	322	-0.22	0.82	-2.60	2.30
School has middle grades	322	0.36			
School size	322	6.49	4.21	-0.02	42.79
Math achievement 2003	318	-0.22	0.83	-2.59	2.08
Challenging environment index 2002	322	2.38	0.66	1.00	4.00
Challenging environment index 2004	241	2.27	0.62	1.00	3.86
% of minority students in 2002	322	89.92	20.33	0.00	100.00
% of minority students in 2004	228	93.26	14.12	27.18	100.00
% of students eligible for free/reduced lunch 2002	322	79.16	20.85	0.00	100.00
% of students eligible for free/reduced lunch 2004	232	61.40	252.47	-3750.00	100.00
Teacher tenure 2002	322	7.25	3.96	1.00	25.50
Teacher tenure 2004	312	7.49	4.52	0.00	37.00
Advanced degrees 2002	322	0.49	0.24	0.00	1.00

Variable	N	Mean	SD	Minimum	Maximum
Advanced degrees 2004	311	0.51	0.29	0.00	1.00
Common planning time 2002	322	2.35	6.56	-5.00	80.00
Common planning time 2004	241	2.62	1.80	0.00	10.00
Implementation stage data are missing	322	4.3%			
Middle implementation stage, 3–5 yrs	322	21.1%			
Older implementation stage, over 5 yrs	322	24.8%			
Early implementation stage, 0–3 yrs	322	49.7%			

Table 6.2.A. Descriptive statistics of the analytical sample used for the analyses of social capital

Variable	N	Mean	SD	Minimum	Maximum
Collective commitment 2004	317	3.1882129	0.3468963	1.8	4
Professional Learning Community 2004	312	3.0096925	0.5270326	1.2	4.5333333
Change in math achievement 2001–2002	321	0.0104326	0.6281103	-2.4309823	2.5979414
Change in reading achievement 2001–2002	322	0.0161348	0.5893007	-2.4627777	1.8959568
Collective commitment 2002	322	3.1991235	0.3253502	2.12	4
Professional Learning Community 2002	322	2.8748357	0.4946416	1.4	4.4
Math achievement 2001	322	-0.2196261	0.8056027	-2.6788797	2.7844824
Reading achievement 2001	322	-0.2239615	0.8207793	-2.6043596	2.29705
School has middle grades	322	35.71%			
School size	322	6.4947826	4.2077814	-0.02	42.79
Math achievement 2003	318	-0.218643	0.82778346	-2.5895697	2.0785336
Challenging environment index 2002	322	2.3845016	0.6595007	1	4
Challenging environment index 2004	241	2.2736613	0.6197697	1	3.8571429
% of minority students 2002	322	89.9199437	20.3308868	0	100
% of minority students 2004	228	93.2610683	14.1238781	27.184466	100
% of students eligible for free/reduced lunch 2002	322	79.162524	20.8542226	0	100
% of students eligible for free/reduced lunch eligible students 2004	232	61.3989517	252.473084	-3750	100

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Variable	N	Mean	SD	Minimum	Maximum
Teacher tenure 2002	322	7.2517409	3.9579591	1	25.5
Teacher tenure 2004	312	7.4894217	4.517978	0	37
Advanced degrees 2002	322	0.4919019	0.2443112	0	1
Advanced degrees 2004	311	0.5050218	0.2876532	0	1
Common planning time 2002	322	2.3501739	6.5600255	-5	80
Common planning time i004	241	2.6150435	1.8037763	0	10
Implementation stage data are missing	322	4.35%			
Middle implementation stage, 3–5 yrs	322	21.12%			
Older implementation stage, over 5 yrs	322	24.84%			
Early implementation stage, 0–3 yrs	322	49.69%			

Table 7.1.A. Description of school-level achievement data by state

State	Test	Test Score	Grades Tested
A	NRT until 2003; CRT 2002–2003	Mathematics average scaled score	2–8
		Reading average scaled score	2–8
B	NRT	Mathematics NCE score	2–8
		Reading NCE score	2–8
C	CRT	Mathematics % at or above level 2	5 and 8
		Reading % at or above level 2	4 and 8
	CRT	Mathematics [ISAT] % meeting standards and higher	3, 5, and 8
		Reading [ISAT] % meeting standards and higher	3, 5, and 8
D	CRT	Mathematics [IGAP] average scaled score	3, 6, and 8
		Reading [IGAP] average scaled score	3, 6, and 8
E	NRT	Mathematics average scaled score	5 and 8
		Reading average scaled score	4 and 7
F	CRT 1999–2002; CRT 2002–2004	Mathematics % satisfactory/proficient +	3, 5, and 8
		Reading % satisfactory/proficient +	3, 5, and 8
		Mathematics % proficient and higher	4 and 8
G	CRT	ELA % proficient and higher	4 and 8
H	CRT	Mathematics % moderate+/% basic+	4 and 7
		Reading % moderate+/% basic+	4 and 7
I	CRT	Mathematics % at or above progressing (level 2)	4 and 8
		Reading % at or above satisfactory	3 and 7

State	Test	Test Score	Grades Tested
J	CRT (grade 8); CRT (grade 4) 2002; CRT 2003	Mathematics % proficient and above	4 and 8
		Reading % proficient and above	4 and 8
K	NRT 1999–2002; NRT 2003	Mathematics percentile rank	4 and 8
		Reading percentile rank	4 and 8
L	CRT	Mathematics % scoring at or above proficient on primary state assessment (PSA) or mathematics % passing for all students	4 and 6
		Reading % scoring at or above proficient or reading % passing for all students	4 and 6
M	CRT	Mathematics average scale score	5 and 8
		Reading average scale score	5 and 8
N	CRT 1999–2002; CRT 2003	Mathematics [Eng] % passing for all students	3–8
		Reading [Eng] % passing	3–8
O	NRT	Mathematics percentile rank	5 and 8
		Reading percentile rank	5 and 8
P	CRT	Mathematics % at or above level 2	4 and 7
		Reading % at or above level 2	4 and 7

Table 7.2.A. Description of student-level achievement for participating schools in Hickoryville (State C)

Year	Grade	Variable	CSR Schools					Comparison Schools				
			N	Mean	SD	Minimum	Maximum	N	Mean	SD	Minimum	Maximum
2000–2001	2	Norm-referenced test math scaled score	1085	563.0	38.3	425	699	873	572.7	39.3	464	699
		Norm-referenced test reading scaled score	1079	566.3	37.2	465	716	869	579.6	40.0	465	739
		Percentage African American	1283	0.6	0.5	0	1	1149	0.3	0.5	0	1
		Percentage Hispanic	1283	0.3	0.5	0	1	1149	0.6	0.5	0	1
		Percentage White	1283	0.0	0.1	0	1	1149	0.1	0.2	0	1
		Percentage other	1283	0.0	0.1	0	1	1149	0.0	0.1	0	1
		English as a second language	1283	0.5	0.5	0	1	1149	0.6	0.5	0	1
		Free/reduced lunch	1283	1.0	0.2	0	1	1149	0.9	0.3	0	1
2001–2002	3	M_NRT	1141	591.4	40.7	424	759	1028	602.9	40.4	485	732
		Norm-referenced test reading scale score	1137	593.8	39.8	500	741	1027	602.3	41.7	513	741
2002–2003	4	M_NRT	1109	610.7	37.0	512	739	1021	621.4	38.5	524	765
		Norm-referenced test reading scale score	1107	616.9	37.1	514	760	1021	626.0	38.7	462	760
2003–2004	5	M_NRT	1049	632.2	34.8	537	781	1020	638.5	35.3	551	733
		Norm-referenced test reading scale score	1049	630.4	33.2	549	738	1021	636.2	35.9	542	754
		Free/reduced lunch	1140	1.0	0.2	0	1	1114	0.9	0.3	0	1

Note: Eighteen schools (9 pairs) used in the analysis: 9 SFA schools and 8 of them in the sixth year of implementation in 2001–2002.

Table 7.3.A. Description of student-level achievement for participating schools in Elm County (State A)

Year	Grade	Variable	CSR Schools					Comparison Schools				
			N	Mean	SD	Minimum	Maximum	N	Mean	SD	Minimum	Maximum
2001–2002	3	Math scaled score	1177	294.5	69.8	0	515	883	310.2	66.5	0	634
		Reading scaled score	1177	264.3	85.7	0	530	883	296.4	67.6	0	595
		Percentage female	1177	0.5	0.5	0	1	883	0.5	0.5	0	1
		Percentage African American	1177	0.1	0.3	0	1	883	0.2	0.4	0	1
		Percentage Hispanic	1177	0.9	0.3	0	1	883	0.8	0.4	0	1
		English as a second language	1175	0.8	0.4	0	1	881	0.7	0.5	0	1
		Free/reduced lunch	1177	1.0	0.0	0	1	883	1.0	0.1	0	1
2002–2003	4	Math scaled score	1177	305.0	59.9	0	514	921	328.0	63.6	178	600
		Reading scaled score	1177	304.3	37.2	181	452	921	318.2	43.5	0	471
2003–2004	5	Math scaled score	1153	299.9	58.4	179	600	940	316.1	69.2	0	600
		Reading scaled score	1153	303.2	42.9	0	545	940	314.8	44.5	210	457

Note: Five pairs (10 schools) used: 5 SFA schools, 4 in third year and 1 in the fourth year of implementation in 2001–2002.

Table 7.4.A. Description of student-level achievement for participating schools in Dodgeland (State D)

Year	Grade	Variable	CSR Schools					Comparison Schools				
			N	Mean	SD	Minimum	Maximum	N	Mean	SD	Minimum	Maximum
1999–2000	3	Math score	982	147.6	10.8	120	197	641	148.4	10.9	124	190
		Reading score	974	149.6	11.4	124	190	630	149.6	11.7	126	187
		Demographic variables	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	5	Math score	1028	149.9	13.1	121	200	871	150.0	12.0	120	191
		Reading score	1028	150.6	10.7	124	187	870	151.3	10.8	125	193
		Demographic variables	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2000–2001	3	Math score	359	147.3	11.6	125	185	265	149.9	11.2	120	180
		Reading score	356	146.6	12.4	120	183	253	147.9	12.0	120	185
		Demographic variables	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	5	Math score	940	150.3	12.4	120	200	855	151.1	12.3	120	200
		Reading score	933	149.3	12.2	120	200	850	149.3	12.1	120	194
		Demographic variables	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2002	3	Math score	890	152.5	12.6	125	200	710	151.5	11.6	120	186
		Reading score	885	149.5	13.1	120	194	665	150.0	12.8	120	191
		Free/reduced lunch	899	0.9	0.3	0	1	720	0.8	0.4	0	1
		Percentage female	898	0.5	0.5	0	1	720	0.5	0.5	0	1
		Limited English proficiency	899	0.0	0.2	0	1	720	0.1	0.2	0	1

Year	Grade	Variable	CSR Schools					Comparison Schools				
			N	Mean	SD	Minimum	Maximum	N	Mean	SD	Minimum	Maximum
	5	Percentage African American	898	0.0	0.1	0	1	720	0.0	0.1	0	1
		Percentage Hispanic	898	0.0	0.1	0	1	720	0.0	0.1	0	1
		Percentage other	898	0.7	0.5	0	1	720	0.7	0.4	0	1
		Math score	1072	152.8	13.9	120	200	1001	150.9	13.5	120	200
		Reading score	1070	150.5	12.0	120	198	997	150.0	12.8	120	191
		Free/reduced lunch	1077	0.9	0.3	0	1	1010	0.9	0.3	0	1
		Percentage female	1077	0.5	0.5	0	1	1010	0.5	0.5	0	1
		Limited English proficiency	1077	0.1	0.3	0	1	1010	0.1	0.3	0	1
2003	3	Percentage African American	1077	0.0	0.1	0	1	1009	0.0	0.0	0	1
		Percentage Hispanic	1077	0.0	0.1	0	1	1009	0.0	0.1	0	1
		Percentage other	1077	0.5	0.5	0	1	1009	0.6	0.5	0	1
		Math score	1016	152.7	12.8	120	200	729	151.9	11.6	127	196
		Reading score	1012	148.6	13.3	120	197	723	149.6	12.4	120	193
		Free/reduced lunch	1022	0.9	0.3	0	1	737	0.8	0.4	0	1
		Percentage female	1020	0.5	0.5	0	1	735	0.5	0.5	0	1
		Limited English proficiency	1022	0.0	0.2	0	1	737	0.0	0.2	0	1
		Percentage African American	1019	0.6	0.5	0	1	735	0.7	0.4	0	1
		Percentage Hispanic	1019	0.3	0.5	0	1	735	0.3	0.4	0	1

Year	Grade	Variable	CSR Schools					Comparison Schools				
			N	Mean	SD	Minimum	Maximum	N	Mean	SD	Minimum	Maximum
	5	Percentage other	1019	0.0	0.1	0	1	735	0.0	0.1	0	1
		Math score	998	154.9	14.2	120	200	905	153.7	13.7	120	200
		Reading score	993	150.2	12.6	120	196	903	150.7	12.3	120	191
		Free/reduced lunch	1003	0.9	0.3	0	1	911	0.9	0.3	0	1
		Percentage female	999	0.5	0.5	0	1	906	0.5	0.5	0	1
		Limited English proficiency	1003	0.1	0.3	0	1	911	0.1	0.4	0	1
		Percentage African American	998	0.4	0.5	0	1	907	0.6	0.5	0	1
		Percentage Hispanic	998	0.5	0.5	0	1	907	0.4	0.5	0	1
		Percentage other	998	0.0	0.1	0	1	907	0.0	0.1	0	1
2004	3	Math score	937	154.8	14.7	125	200	584	154.8	13.3	125	198
		Reading score	937	151.5	14.5	120	200	587	152.4	13.9	120	198
		Free/reduced lunch	945	0.9	0.3	0	1	596	0.9	0.2	0	1
		Percentage female	945	0.5	0.5	0	1	596	0.5	0.5	0	1
		Limited English proficiency	945	0.0	0.1	0	1	596	0.0	0.1	0	1
		Percentage African American	945	0.6	0.5	0	1	596	0.7	0.4	0	1
		Percentage Hispanic	945	0.3	0.5	0	1	596	0.2	0.4	0	1
		Percentage other	945	0.0	0.1	0	1	596	0.0	0.1	0	1
	5	Math score	776	158.7	15.4	120	200	715	157.4	14.4	121	200
		Reading score	774	152.2	13.9	120	200	713	152.4	12.9	120	193

| Year | Grade | Variable | CSR Schools | | | | | | Comparison Schools | | | | | |
			N	Mean	SD	Minimum	Maximum		N	Mean	SD	Minimum	Maximum
		Free/reduced lunch	783	0.9	0.3	0	1		720	0.9	0.2	0	1
		Percentage female	783	0.5	0.5	0	1		720	0.5	0.5	0	1
		Limited English proficiency	783	0.2	0.4	0	1		720	0.2	0.4	0	1
		Percentage African American	783	0.5	0.5	0	1		720	0.6	0.5	0	1
		Percentage Hispanic	783	0.4	0.5	0	1		720	0.4	0.5	0	1
		Percentage other	783	0.0	0.1	0	1		720	0.0	0.1	0	1

Note: Twelve pairs (24 schools) used: 5 Accelerated Schools, 1 Atlas, 1 Co-nect, and 5 SFA; 7 CSR were middle aged and 5 were old aged in 2001–2002.

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Table 7.5.A. Description of student-level achievement for participating schools in Rainfield (State N)

Year	Grade	N Obs	Variable	CSR Schools					Comparison Schools				
				N	Mean	SD	Minimum	Maximum	N	Mean	SD	Minimum	Maximum
2001–2002	3	2003	MATH	1039	73.2	14.3	2	93	961	74.0	13.8	17	93
			READ	1159	66.4	31.0	1	94	1031	69.8	27.8	1	96
			Demographic variables	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	4	1622	MATH	1014	67.1	26.9	9	91	1055	70.6	25.3	9	91
			READ	1014	71.9	28.7	4	98	1055	74.1	27.3	15	98
			Demographic variables	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	5	1636	MATH	1297	70.2	28.0	9	93	1281	73.6	26.2	9	93
			READ	1297	68.0	31.3	8	101	1281	71.0	29.7	8	101
			Demographic variables	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2002–2003	3	1877	MATH	997	75.8	16.2	1	93	852	74.0	17.5	1	93
			READ	997	77.8	18.7	2	94	852	76.6	20.3	2	94
			Demographic variables	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	4	1859	MATH	1012	77.6	16.0	9	91	1070	77.4	16.8	9	91
			READ	1012	79.9	19.4	15	98	1070	79.7	20.4	15	98

Year	Grade	N Obs	Variable	CSR Schools					Comparison Schools				
				N	Mean	SD	Minimum	Maximum	N	Mean	SD	Minimum	Maximum
			Demographic variables	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	5	1540	MATH	1109	81.7	15.0	10	93	1105	81.9	14.7	10	93
			READ	1109	81.7	20.5	8	101	1105	81.7	20.2	8	101
			Demographic variables	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2003–2004	3	1740	MATH	970	77.1	17.9	1	93	593	79.6	16.3	1	93
			READ	970	78.2	19.5	2	94	593	78.8	19.6	2	94
			Percentage female	1740	0.5	0.5	0	1	1283	0.5	0.5	0	1
			English as a second language	1526	0.4	0.5	0	1	1126	0.5	0.5	0	1
			Special education	1526	0.1	0.3	0	1	1126	0.1	0.3	0	1
			Free/reduced lunch	1526	0.9	0.3	0	1	1126	1.0	0.2	0	1
			Percentage African American	1740	0.4	0.5	0	1	1283	0.3	0.5	0	1
			Percentage Hispanic	1740	0.6	0.5	0	1	1283	0.7	0.5	0	1
			Percentage White	1740	0.0	0.2	0	1	1283	0.0	0.1	0	1
			Percentage other	1740	0.0	0.1	0	1	1283	0.0	0.1	0	1
	4	1595	MATH	894	79.9	14.5	9	91	662	78.7	16.7	9	91
			READ	894	82.1	18.9	15	98	662	79.7	21.4	15	98
			Percentage female	1595	0.5	0.5	0	1	1197	0.5	0.5	0	1

Year	Grade	N Obs	Variable	CSR Schools					Comparison Schools				
				N	Mean	SD	Minimum	Maximum	N	Mean	SD	Minimum	Maximum
			English as a second language	1380	0.4	0.5	0	1	1048	0.4	0.5	0	1
			Special education	1380	0.1	0.3	0	1	1048	0.1	0.3	0	1
			Free/reduced lunch	1380	0.9	0.3	0	1	1048	1.0	0.2	0	1
			Percentage African American	1595	0.4	0.5	0	1	1197	0.3	0.4	0	1
			Percentage Hispanic	1595	0.6	0.5	0	1	1197	0.7	0.5	0	1
			Percentage White	1595	0.0	0.2	0	1	1197	0.0	0.2	0	1
			Percentage other	1595	0.0	0.1	0	1	1197	0.0	0.1	0	1
	5	1528	MATH	1114	80.8	19.2	9	93	851	82.7	15.2	10	93
			READ	1114	80.6	23.8	8	101	851	82.7	19.2	8	101
			Percentage female	1528	0.5	0.5	0	1	1160	0.5	0.5	0	1
			English as a second language	1334	0.3	0.4	0	1	1017	0.3	0.5	0	1
			Special education	1334	0.2	0.4	0	1	1017	0.1	0.3	0	1
			Free/reduced lunch	1334	0.9	0.3	0	1	1017	1.0	0.2	0	1
			Percentage African American	1528	0.4	0.5	0	1	1160	0.3	0.4	0	1
			Percentage Hispanic	1528	0.6	0.5	0	1	1160	0.7	0.5	0	1
			Percentage White	1528	0.1	0.2	0	1	1160	0.0	0.2	0	1
			Percentage other	1528	0.0	0.1	0	1	1160	0.0	0.1	0	1

Note: Twenty pairs (40 schools) used: 11 old aged schools, 5 young, and 4 middle aged in 2001–2002; 14 SFA, 2 Co-nect, and 4 Accelerated Schools. The majority of old schools were SFA.

Table 7.6.A. Description of student-level achievement for participating schools in Riverton (State M)

Year	Grade	Variable	CSR Schools					Comparison Schools				
			N	Mean	SD	Minimum	Maximum	N	Mean	SD	Minimum	Maximum
2001–2002	3	Math SS (multiple choice)	620	587.6	36.0	503	694	601	585.6	38.0	499	734
		Reading SS (multiple choice)	622	600.9	37.7	519	704	610	592.9	38.6	478	704
		Percentage African American	627	0.7	0.5	0	1	610	0.8	0.4	0	1
		Percentage Hispanic	627	0.1	0.3	0	1	610	0.0	0.2	0	1
		Percentage other	627	0.1	0.2	0	1	610	0.0	0.1	0	1
		Percentage female	627	0.5	0.5	0	1	610	0.5	0.5	0	1
		English for speakers of other languages	627	0.0	0.2	0	1	610	0.0	0.2	0	1
		Special education exceptionality	627	0.2	0.4	0	1	610	0.1	0.3	0	1
		Free lunch indicator	627	0.4	0.5	0	1	610	0.5	0.5	0	1
2002–2003	4	Math SS (multiple choice)	605	619.9	40.7	403	770	638	611.7	36.2	403	759
		Read SS (multiple choice)	607	627.5	38.8	433	871	643	620.9	45.0	433	977
2003–2004	5	Math SS (multiple choice)	836	624.0	53.0	347	797	621	612.2	49.4	347	797
		Read SS (multiple choice)	837	632.8	49.5	373	745	625	620.8	52.3	401	748

Note: Five pairs (10 schools) used; 5 CSR schools were all middle aged in 2001–2002.

Table 7.7.A. Modeling Multiple Grades Over Year 1

In the HLM, the weighting process can be done through centering the dummy variables of grades. Below is the model description:

Note: i = student, j = year, and k = school.

Level 1. Student Level

$$Y_{ijk} = II_{0jk} + II_{1jk}(Grade\_2) + II_{2jk}(Grade\_3) + II_{3jk}(Grade\_4) + II_{4jk}(Grade\_6) + II_{5jk}(Grade\_7) +$$
$$II_{6jk}(Grade\_8) + \Pi_{7jk}(Gender) + \Pi_{8jk}(LEP) + \Pi_{9jk}(Black) + \Pi_{10jk}(Hispanic) + \Pi_{11jk}(Otherminority) + e_{ijk}$$

Note: Grade 5 as the reference group and grade dummy is grand centered. For the case of Hickoryville, grades 7 and 8 will not be included and set grade 4 as the reference group.

Level 2. Time Level

$$II_{0ijk} = B_{00k} + B_{01k}(Time) + B_{02k}(\%free\_lunch) + B_{03k}(\%minority) + B_{04k}(implementation \quad year) +$$
$$B_{05k}(Year*implementation \quad year) + R_{0ijk}$$
$$(\% \ minority) + B_{04k} \ (implementation \ year) +$$

Note: Time is coded as 2000 = 0, 2001 = 1, 2002 = 2 , and 2003 = 3. So B_{01k} is the mean score for school k in 2000 and B_{01k} is average yearly growth from 2000 to 2003.

Level 3. School Level

$$B_{00k} = \gamma_{000} + \gamma_{001}(CSR) + \gamma_{002}(Implementation) + \gamma_{003}(Implementation*CSR) +$$
$$\gamma_{005}(Change \quad in \quad implementation) + \gamma_{006}(Middle) + U_{0k}$$

$$B_{01k} = \gamma_{010} + \gamma_{011}(CSR) + \gamma_{012}(Implementation) + U_{0k}$$

Note: The most interesting parameters in this model are γ011 and γ012, which indicate impact of CSR on the yearly changes in the average achievement score.

The model described above is relevant particularly for student-level achievement data without link over year. In the model proposed above, we will estimate the changes in student achievement at school level rather than at grade level. In the Hickoryville case, students are linked over years. The linkage from year to year for individual students is no longer needed when multiple grades are included rather than a single cohort is followed over years. When employing this approach, we are not taking the advantage of the data, the linkage of students over year.

Table 7.8.A. Modeling Single Grades Over Year 1

To model grade-level growth is a simple version as modeling school-level growth. That is, excluding the dummy variables of grade. Below is the model description:

Note: i = student, j = year, and k = school.

Level 1. Student Level

$$Y_{ijk} = II_{0jk} + \Pi_{1jk}(Gender) + \Pi_{2jk}(LEP) + \Pi_{3jk}(Black) + \Pi_{4jk}(Hispanic) + \Pi_{5jk}(Otherminority) + e_{ijk}$$

Level 2. Time Level

$$II_{0ijk} = B_{00k} + B_{01k}(Time) + B_{02k}(\%free\_lunch) + B_{03k}(\%minority) + B_{04k}(implementation \quad year) +$$
$$B_{05k}(Year*implementation \quad year) + R_{0ijk}$$

$(\%minority)+B04k\ (implantation\ year)$

Note: Time is coded 2000 = 0, 2001 = 1, 2002 = 2 , and 2003 = 3. So B_{00k} is the mean score for school k in 2000 and B_{01k} is average yearly growth from 2000 to 2003.

Level 3. Grade (School) Level

$$B_{00k} = \gamma_{000} + \gamma_{001}(CSR) + \gamma_{002}(Implementation) + \gamma_{003}(Implementation*CSR) +$$
$$\gamma_{005}(Change \quad in \quad implementation) + \gamma_{006}(Middle) + U_{0k}$$

$$B_{01k} = \gamma_{010} + \gamma_{011}(CSR) + \gamma_{012}(Implementation) + U_{0k}$$

Note: The most interesting parameters in this model are γ_{011} and γ_{012}, which indicate impact of CSR on the yearly changes in the average achievement score.

Table 7.9.A. Estimated school-level mathematics and reading Z-score differences between CSR and matched comparison schools 2000–2001 to 2003–2004

Effect	Model for Difference in Math Z-Score		Model for Difference in Reading Z-Score	
	Estimate	SE	Estimate	SE
Intercept	-0.05	0.062	-0.09	0.069
Year indicator: 2001	0.04	0.038	0.02	0.035
Year indicator: 2002	0.05	0.038	-0.07*	0.035
Year indicator: 2003	0.06	0.038	0.00	0.035
Z-score difference in 2000	0.64***	0.095	0.67***	0.094
Z-score average in 2000	-0.12	0.085	-0.07	0.098
Average percentage of students who are eligible for free or reduced-price lunch	-0.07	0.071	-0.05	0.080
Average percentage of minority students	-0.09	0.073	0.06	0.082
Average school size (unit per 1,000 students)	-0.13	0.081	-0.09	0.090
Average student–teacher ratio (unit of 10 students per teacher)	0.05	0.077	0.06	0.086
Average difference in percentage of students who are eligible for free or reduced-price lunch	-0.31	0.368	-0.11	0.419
Average difference in percentage of minority students	-1.01**	0.394	-0.42	0.434
Average difference in school size (unit per 1,000 students)	-0.02	0.019	-0.01	0.021
Average difference in student–teacher ratio (unit of 10 students per teacher)	0.01	0.022	0.04*	0.024
Estimates				
Combined effect in 2001, 2002, and 2003	0.16*	0.093	-0.05	0.086
Variance				
School level	0.31***	0.060	0.43***	0.074
Time level	0.45***	0.034	0.37***	0.029

Note: * *p* value significant at 0.1 level; ** *p* value significant at 0.05 level; *** *p* value significant at 0.01 level.

Table 7.10.A. Estimated Z-score differences in mathematics and reading between CSR and matched comparison schools, by implementation year 2000–2003

Effect	Model for Math		Model for Reading	
	Estimate	SE	Estimate	SE
Intercept	-0.181	0.115	-0.223*	0.118
Year indicator: 2001	0.012	0.121	0.034	0.112
Year indicator: 2002	0.083	0.121	-0.061	0.112
Year indicator: 2003	0.149	0.121	0.110	0.112
Middle age indicator (3–5 years of implementation)	0.081	0.172	0.390**	0.177
Old age indicator (more than 5 years of implementation)	0.027	0.325	0.008	0.334
Z-score difference 1999	0.577***	0.079	0.626***	0.081
Average Z-score 1999	-0.081	0.067	-0.044	0.075
Interaction: middle age and year 2001	0.258	0.184	0.025	0.170
Interaction: middle age and year 2002	0.189	0.184	-0.190	0.170
Interaction: middle age and year 2003	-0.047	0.184	-0.289*	0.170
Interaction: old age and year 2001	-0.264	0.336	-0.008	0.309
Interaction: old age and year 2002	-0.436	0.336	-0.177	0.309
Interaction: old age and year 2003	0.126	0.336	0.061	0.309
Average percentage of students who are eligible for free or reduced-price lunch	-0.062	0.074	-0.053	0.081
Average percentage of minority students	-0.077	0.073	0.076	0.082
Average school size (unit per 1,00 students)	-0.125	0.081	-0.088	0.089
Average student–teacher ratio (unit of 10 students per teacher)	0.048	0.077	0.060	0.086
Average difference in percentage of students who are eligible for free or reduced-price lunch	-0.325	0.368	-0.142	0.416
Average difference in percentage of minority students	-1.029**	0.394	-0.431	0.432
Average difference in school size (unit per 1,000 students)	-0.015	0.019	-0.010	0.021
Average difference in student–teacher ratio (unit of 10 students per teacher)	0.054	0.218	0.379	0.241
Variance				
School level	0.311***	0.060	0.420***	0.073
Time level	0.441***	0.034	0.374***	0.029

Note: * *p* value significant at 0.1 level; ** *p* value significant at 0.05 level; *** *p* value significant at 0.01 level.

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Table 7.11.A. Estimated improvement in student-level mathematics and reading scores for CSR and matched comparison schools in Hickoryville (State C) 2000–2001 to 2003–2004

Effect	Model for Math		Model for Reading	
	Estimate	SE	Estimate	SE
Intercept	656.9***	41.0	903.5***	46.0
CSR	22.8***	1.1	21.9***	0.9
Time	-2.6	7.3	6.9	10.4
CSR*Time	-0.7	1.6	-0.5	1.3
Girl	3.6***	1.1	8.7***	1.2
ESL	-11.8***	1.6	-14.2***	1.6
Free lunch	-3.7**	1.6	-2.8*	1.5
Black	-14.7***	3.5	-15.2***	3.5
Hispanic	-3.0	3.5	-6.2*	3.5
Other	-6.1	6.4	-6.5	6.4
Average percentage of students who are eligible for free or reduced-price lunch	24.2	18.1	-67.1***	17.6
Average percentage of minority students	-96.1**	38.7	-274.3***	43.6
Average school size (unit per 1,00 students)	-1.1	3.5	6.3*	3.7
Variance				
Intercept, school level	214.4**	473.4	473.4**	214.4
Covariance, school level	-32.4**	-40.8	-40.8**	20.3
Time, school level	9.9**	6.6	6.6***	2.8
Intercept, student level	1071.3***	1138.6	1138.6***	40.2
Covariance, student-level	-38.1***	-53.6	-53.6***	10.1
Time, student level	7.0**	14.6	14.6***	3.8
Time level	367.7***	322.9	322.9***	8.2

Note: * p value significant at 0.1 level; ** p value significant at 0.05 level; *** p value significant at 0.01 level.

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Table 7.12.A. Estimated improvement in student-level mathematics and reading scores for CSR and matched comparison schools in Elm County (State A) 2001–2002 to 2003–2004

Effect	Model for Math		Model for Reading	
	Estimate	SE	Estimate	SE
Intercept	4532.1**	1568.600	1721.8	958.030
CSR	3.8	4.494	8.2**	3.412
Time	-18.2	10.709	-13.9	8.373
CSR*Time	-0.1	6.289	11.0**	4.720
Girl	4.5**	2.213	11.7***	1.616
ESL	-15.8***	3.641	-20.8***	2.771
Free lunch	0.2	4.305	-5.5	3.818
Black	-3.8	21.322	-15.8	16.043
Hispanic	34.2	21.245	12.9	15.988
Other	35.4	23.957	8.0	18.548
Average percentage of students who are eligible for free or reduced-price lunch	-10.5	150.380	-292.3**	90.805
Average percentage of minority students	-4547.2**	1708.880	-1202.1	1042.980
Average school size (unit per 1,000 students)	-0.9	0.571	0.0	0.348
Average student–teacher ratio (unit of 10 students per teacher)	16.3**	4.636	2.3	2.859
Variance				
Intercept, school level	70.7	70.473	79.8	59.838
Covariance, school level	-23.8	45.614	-53.0	37.240
TIME, school level	93.0	48.994	48.1*	28.130
Intercept, student level	2974.2***	124.370	3625.3***	139.970
Covariance, student level	-185.1***	48.665	-1253.8***	67.060
TIME, student level	113.2***	32.754	524.5***	42.944
Time level	1189.5***	39.784	1090.8***	37.123

*Note: * p value significant at 0.1 level; ** p value significant at 0.05 level; *** p value significant at 0.01 level.*

Table 7.13.A. Estimated improvement in student-level mathematics and reading scores for CSR and matched comparison schools in Riverton (State M) 2001–2002 to 2003–2004

Effect	Model for Math		Model for Reading	
	Estimate	SE	Estimate	SE
Intercept	625.2***	16.202	629.7***	15.749
CSR	-3.5	10.367	-1.3	8.733
Time	18.7***	3.284	16.7***	2.236
CSR*Time	2.0	4.624	1.1	3.138
Girl	-10.6***	3.676	-11.5***	3.772
ESL	-5.1	4.487	-7.9*	4.642
Special education	1.8	7.620	12.5	7.902
Free lunch	8.7***	2.038	15.8***	2.108
Black	-5.7	5.853	-27.2***	6.062
Hispanic	-1.9	2.731	-3.0	2.773
Other	8.2***	1.852	6.8***	1.901
Average percentage of students who are eligible for free or reduced-price lunch	-43.5*	19.044	-36.8	19.041
Variance				
Intercept, school level	200.2	126.260	136.5	91.139
Covariance, school level	-65.8	47.533	-27.6	25.318
TIME, school level	36.0	23.612	13.5	10.432
Intercept, student level	443.0***	64.345	518.8***	72.690
Covariance, student level	176.7***	36.021	178.3***	37.073
TIME, student level	63.8*	33.497	12.0	30.904
Time level	681.5***	39.763	741.4***	42.024

Note: * *p* value significant at 0.1 level; ** *p* value significant at 0.05 level; *** *p* value significant at 0.01 level.

Table 7.14.A. Estimated improvement in student-level mathematics and reading scores for CSR and matched comparison schools in Dodgeland (State D) 1999–2000 to 2003–2004

Effect	Model for Math		Model for Reading	
	Estimate	SEr	Estimate	SE
Intercept	157.7***	8.0	160.5***	6.7
Dummy: 2000–2001	1.4***	0.5	-1.6***	0.5
Dummy: 2001–2002	2.0***	0.4	-0.3	0.4
Dummy: 2002–2003	3.5***	0.4	-0.4	0.4
Dummy: 2003–2004	6.9***	0.5	1.7***	0.5
Dummy centered: grade 5	0.4***	0.1	0.3***	0.1
Dummy: CSR	-3.0*	1.5	-2.6*	1.3
Interaction: Y2001*CSR	-0.4	0.6	0.3	0.6
Interaction: Y2002*CSR	1.8***	0.6	0.2	0.6
Interaction: Y2003*CSR	1.6***	0.6	-0.3	0.6
Interaction: Y2004*CSR	0.7	0.6	-0.2	0.6
Average percentage of students who are eligible for free or reduced-price lunch	22.4**	9.6	7.9	8.1
Average percentage of minority students	-37.1***	7.8	-23.7***	6.6
Average school size (unit per 1,000 students)	0.1	0.2	0.2	0.2
Average student–teacher ratio (unit of 10 students per teacher)	0.4	0.3	0.2	0.2
Variance				
School level	10.1***	3.4	7.1***	2.4
Time level	146.0***	1.6	142.7***	1.6

Note: * *p* value significant at 0.1 level; ** *p* value significant at 0.05 level; *** *p* value significant at 0.01 level.

Table 7.15.A. Estimated improvement in student-level mathematics and reading scores for CSR and matched comparison schools in Rainfield (State N) 1999–2000 to 2003–2004

Effect	Model for Math		Model for Reading	
	Estimate	SE	Estimate	SE
Intercept	83.7***	11.3	85.7***	15.1
Dummy: 2000–2001	5.4***	0.5	7.9***	0.6
Dummy: 2001–2002	8.0***	0.6	9.5***	0.7
Dummy centered: grade 4	-0.5	0.4	3.4***	0.4
Dummy centered: grade 5	2.7***	0.4	2.9***	0.4
Dummy: CSR	-2.9**	1.4	-2.9	1.9
Interaction: Y2000*CSR	2.8****	0.7	3.1***	0.8
Interaction: Y2001*CSR	1.4	0.7	2.4***	0.9
Average percentage of students who are eligible for free or reduced-price lunch	-23.8	16.1	-21.2	21.4
Average percentage of minority students	9.1	21.4	0.9	28.5
Average school size (unit per 1,000 students)	0.3	0.4	0.4	0.5
Average student–teacher ratio (unit of 10 students per teacher)	0.0	0.4	0.0	0.5
Variance				
School level	15.4***	4.2	27.5***	7.4
Time level	364.9***	3.9	560.9***	5.9

Note: * p value significant at 0.1 level; ** p value significant at 0.05 level; *** p value significant at 0.01 level.

Table 7.16.A. The 2002 implementation score of PD type and difference in mathematics and reading Z-Score between CSR schools made from comparison schools 2000–2003

Effect	Model for Math		Model for Reading	
	Estimate	SE	Estimate	SE
Intercept	-0.317	0.505	0.104	0.579
Year of implementation	0.037	0.025	-0.003	0.027
Average score of 2002 implementation: PD type	0.112	0.656	-0.236	0.754
Difference in 2002 implementation score: PD type	0.587	0.470	1.059*	0.541
Z-score difference 1999	0.652***	0.082	0.673***	0.094
Average z-score 1999	-0.028	0.077	0.091	0.088
Average percentage of students who are eligible for free or reduced-price lunch	-0.129*	0.077	-0.089	0.088
Average percentage of minority students	-0.058	0.073	0.036	0.084
Average school size (unit per 1,000 students)	-0.074	0.078	-0.050	0.090
Average student–teacher ratio (unit of 10 students per teacher)	0.059	0.077	0.112	0.088
Average difference in percentage of students who are eligible for free or reduced-price lunch	-0.261	0.381	-0.634	0.437
Average difference in percentage of minority students	-0.752*	0.418	0.096	0.481
Average difference in school size (unit per 1,000 students)	-0.004	0.019	0.002	0.021
Variance				
Intercept, school level	0.460**	0.184	0.791***	0.233
Covariance	-0.063*	0.041	-0.115**	0.050
Year of implementation	0.018***	0.009	0.031***	0.011
Time level	0.383***	0.034	0.326***	0.029

Note: * *p* value significant at 0.1 level; ** *p* value significant at 0.05 level; *** *p* value significant at 0.01 level.

Table 8.1.A. Reported reasons for dropping a CSR model

Reason	2003 (Principal)	%	2004 (Principal)	%	2004 (Teacher)	%
Lost district support	20	28.99	19	31.15	256	31.84
Lost funds	15	21.74	15	24.59	n/a	n/a
Saw no benefit	6	8.70	4	6.56	n/a	n/a
Incompatible with curriculum	5	7.25	1	1.64	69	8.58
New principal	1	1.45	2	3.28	n/a	n/a
Contract ended	n/a	n/a	11	18.03	116	14.43
Lost principal support	n/a	n/a	n/a	n/a	119	14.80
Lost faculty support	n/a	n/a	n/a	n/a	166	20.65
Did not improve student learning	n/a	n/a	n/a	n/a	125	15.55
Too difficult to implement	n/a	n/a	n/a	n/a	34	4.23
New reform	n/a	n/a	n/a	n/a	118	14.68
Other	13	18.84	4	6.56	63	7.84
Multiple	9	13.04	5	8.20		
Total usable responses	69	100.00	61	100.00	804	100.00