



The Lifecycle of Comprehensive School Reform

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The Lifecycle of Comprehensive School Reform

Abstract

The range of activity related to comprehensive school reform (CSR) is impressive. Thousands of schools have implemented CSR models over the past decade, using either self-developed models or externally developed models. In September 2000, the U.S. Department of Education awarded a grant to American Institutes for Research[®] to conduct the National Longitudinal Evaluation of Comprehensive School Reform (NLECSR). The NLECSR is a quantitative and qualitative study of behavior, decisions, processes, and outcomes. It employs a quasi-experimental design with matched treatment and control schools. We examine CSR through a series of phases, from adoption to implementation to sustainability. We describe (a) the birth of school reform; that is, the process whereby schools adopt CSR models; (b) the design of and findings from our survey measure of implementation; (c) changes to the reform process within schools; that is, the process of implementation and the contextual factors affecting implementation; and (d) the sustainability of reform within schools as well as a critical indicator of “school health”—the relationship between model implementation and student academic achievement. Thus, we employ the metaphor of a lifecycle of reform. Several key findings are discussed.



The Lifecycle of Comprehensive School Reform

Background and Study Purpose

David Tyack and Larry Cuban (1995), in their seminal history of public school reform, described the cycles of reform over the past century or so. 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 several 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.

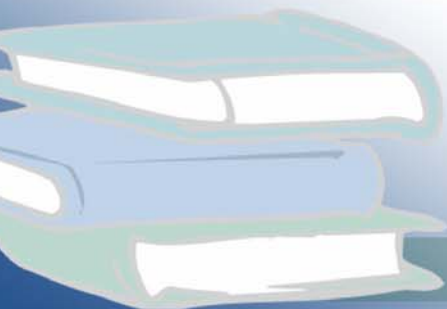
In September 2000, the U.S. Department of Education awarded to AIR a grant to conduct the National Longitudinal Evaluation of Comprehensive School Reform (NLECSR). The grant was one of five awarded under The Comprehensive School Reform Research Grant Competition. The purpose of the program

is to expand understanding of the full dimensions of school reform through rigorous investigation of the large-scale implementation of research-based comprehensive school reform models as a strategy for increasing student achievement.

After a brief overview of NLECSR, this paper reports our preliminary findings.

Overview of the Study

The NLECSR is a quantitative and qualitative study of behavior, decisions, and processes, and outcomes. It employs a quasi-experimental design with matched treatment and comparison schools. Begun in the fall of 2000, NLECSR will conclude early this fall (2005).



We are determining the effects of CSR models on student achievement in about 650 elementary and middle schools (grades 3 through 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 are noting the contextual supports that contribute to CSR model effectiveness. The 650 participating schools are located in 21 districts, primarily urban areas, across 16 states. NLECSR involves 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 those districts, schools, and classes.

To complement national survey data, we also conducted qualitative research in 34 “high-performing” and “high-potential” CSR schools. These 34 schools are located in five districts. These qualitative case studies are contributing to our understanding of both the implementation and the effects of CSR models’ key components and overall model effectiveness. We have observed classes to evaluate instruction; interviewed teachers and administrators about instruction and implementation as well as their experiences with their CSR effort; and collected extant documents about reform, student achievement, and school demographics in each school.

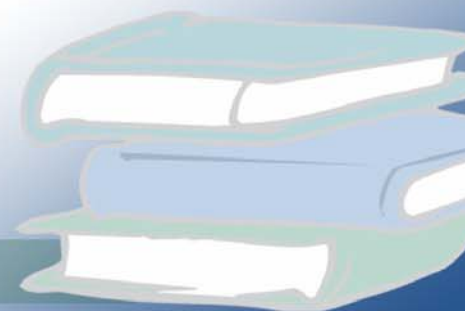
Three research questions (RQs), focusing on outcomes and implementation, drive the NLECSR. The three major questions are:

- ◆ 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 examine CSR implementation in and impact on schools, and its progression, through a series of phases, from adoption to implementation to sustainability. We describe (a) the birth of school reform, that is, the process whereby schools adopt comprehensive school reform models; (b) the design of and findings from our survey measure of implementation; (c) changes to the reform process within schools, that is, the process of implementation and the contextual factors affecting implementation; and (d) 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 lifecycle of reform. We have organized our findings around the major lifecycle phases and major outcomes of school-level reform.

Initiating Reform

True CSR is a lengthy process. It begins with the decision to adopt a model; develops through successive layers of professional development (PD), dialogue, and experimentation with new strategies; and ultimately becomes embedded in the daily culture and practice of a school. Along this path, however, many schools encounter challenges—developer supports may be inadequate, school leadership may not



support the reform, and real change may fail to take hold. Researchers have suggested that the first steps toward reform are of central importance in this complex and demanding process. This paper examines the processes through which schools embark on comprehensive reform.

For schools to enact CSR successfully, they must secure the active engagement of teachers. It is teachers who must commit to the hard work of educational change. For teachers to become substantively engaged in implementation, they must first “buy into” the general premise of reform. They must accept the general premises that reform is important and that the proposed reform in particular is appropriate for the school. Frequently, studies of school reform suggest that the best mechanism through which schools can ensure teacher buy-in is the adoption process. That is, if teachers are engaged in the decision to adopt the model, they will be more likely to approach implementation with a positive perspective.

Drawing on both qualitative and quantitative data from a mixed-methods study of the implementation and impact of CSR, this paper explores the dynamics of the adoption process, focusing on several questions:

- ◆ How prevalent are specific model adoption practices?
- ◆ When schools select and adopt CSR models, are these processes inclusive and legitimate?
- ◆ Do specific adoption strategies bode more favorably for model implementation?

We probed more deeply into these earliest phases of CSR and explored emergent relationships between the quality of the adoption process and implementation.

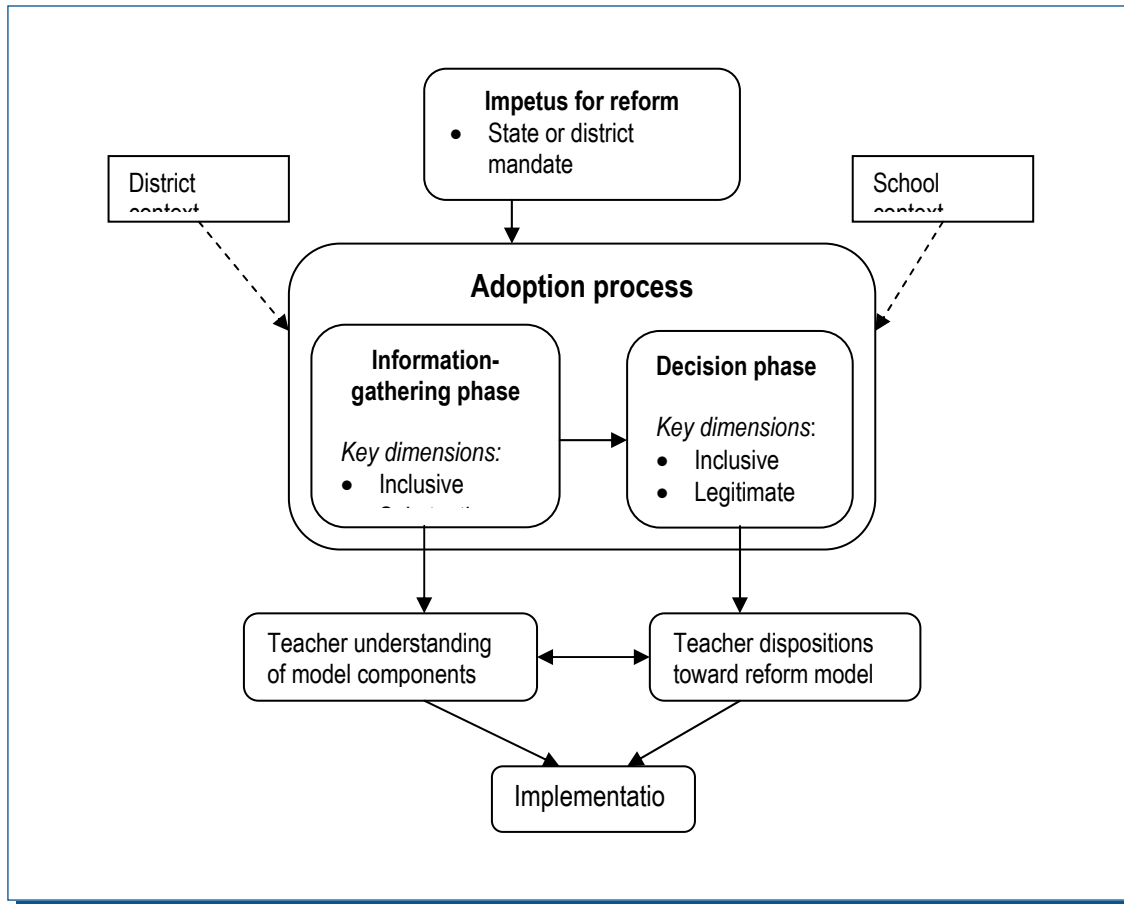
Drawing from the themes in this literature—including descriptions of perceived problems—we can suggest an “ideal type” adoption process. The adoption process appears to have two main phases. During the first or information-gathering phase, stakeholders receive access to information on the models the 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 already implementing models or inviting representatives of model programs to respond directly to faculty questions. In the “ideal” scenario, the information-gathering process should also be inclusive—all stakeholders should have the opportunity to learn about the proposed models.

The next phase of the adoption process is the decision phase. During the decision-making phase, stakeholders share their opinions concerning which model is ultimately adopted. This phase may take different formats—most frequently a vote or a consensus-building process. In either case, the decision-making phase should be inclusive. Most or all stakeholders should be afforded an opportunity to voice their opinions in an environment that does not stifle dissent. The literature suggests that, to best support implementation, this process have legitimacy or be “unfettered.” The process should be more than perfunctory approval of a foregone conclusion.

The current literature suggests that an adoption process that is inclusive, substantive, and legitimate is most likely to ensure that teachers have adequate understanding of the model. Such a process will generate teacher buy-in (favorable disposition toward the model). These characteristics, in turn, will bode more favorably for implementation. Figure 1 shows the general conceptual framework for our analyses.

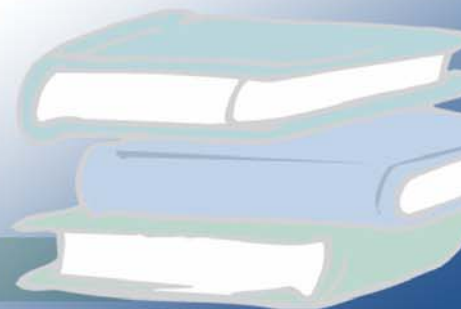


Figure 1. General Conceptual Model of the Adoption Process



To explore the dynamics of the model adoption process, we drew from both survey data and qualitative data from site visits. Both the principal and teacher surveys included items that were directly related to the adoption process, that is, whether the model was adopted through a vote among faculty, a consensus-building process, or neither. Other model-related items, incorporated in our analyses, sought to determine whether the school adopted a model by choice or by mandate and whether the model was subsequently dropped. In addition, each survey contained several items of theoretical interest with regard to adoption, particularly items pertaining to the school-level context, such as the principal’s leadership, the level of decision making, and the teachers’ professional community.

In the past, CSR researchers have suggested that the quality of the adoption process is a critical precursor to gaining teacher buy-in, which in turn is an important indicator of the ultimate success of the model. As such, the “birth” of a CSR model has potentially important implications for its 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 are of greater consequence than the quality of the adoption process.



First, our survey data reveal that CSR schools that engaged in a voting process are more likely to exhibit practices that bode favorably for implementation. Also, survey data suggest that schools in certain types of districts—smaller districts, and those with greater concentrations of CSR schools—are somewhat more likely to vote for the model they subsequently implement. More importantly, however, it appears that the voting process has become an institutionalized component of the model-selection process—in nearly one half of the NLECSR districts, the voting participation level is above 90%. Our qualitative data suggest, however, that great variation still occurs within the act of voting.

Indeed, our qualitative data demonstrate that schools engage in a striking range of activities as they select a CSR model. Some restrict the process to a small group and diffuse little information about models. Others engage the majority of the faculty in the active pursuit of the model that best addresses school needs. In some cases, the quality of the adoption process is associated with subsequent indicators of implementation—notably, the level of teachers’ understanding of the key components of the model. We also found that strong principals and professional communities can overcome potentially negative effects associated with a “closed” adoption process; conversely, positive effects of an “open” adoption process may dissipate quickly. On the whole, the way in which models are adopted within schools may well affect the later health of the model, but the subsequent environment can counterbalance these earliest dispositions.

Implementing Change

We next explored how implementation of CSR models varies and what predicts the level of and change in CSR model implementation. In this analysis, we attempted to identify and describe some factors that promote or hinder implementation of CSR models. We were particularly interested in exploring four specific RQs:

- RQ1. Are schools that implement CSR models engaged in different sets of practices and activities regarding components of CSR models than schools that are not implementing CSR models?
- RQ2. Does the level of implementation vary among CSR models?
- RQ3. Does the level of implementation vary by component and by how comprehensively CSR models are implemented?
- RQ4. What factors, other than having a specific CSR model, predict the level of and change in implementation?

These RQs are answered by applying a quantitative measure of CSR model implementation based on CSR model developers’ survey answers, descriptive statistical analysis, and a multilevel regression approach.

In answering these questions, our analysis is guided by the conceptual model shown in Figure 2.

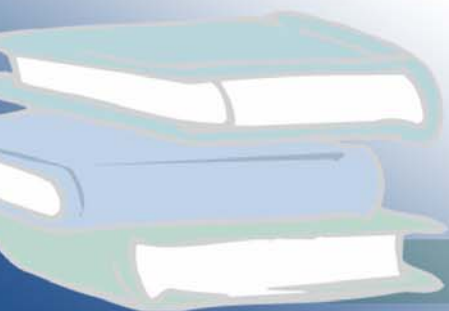
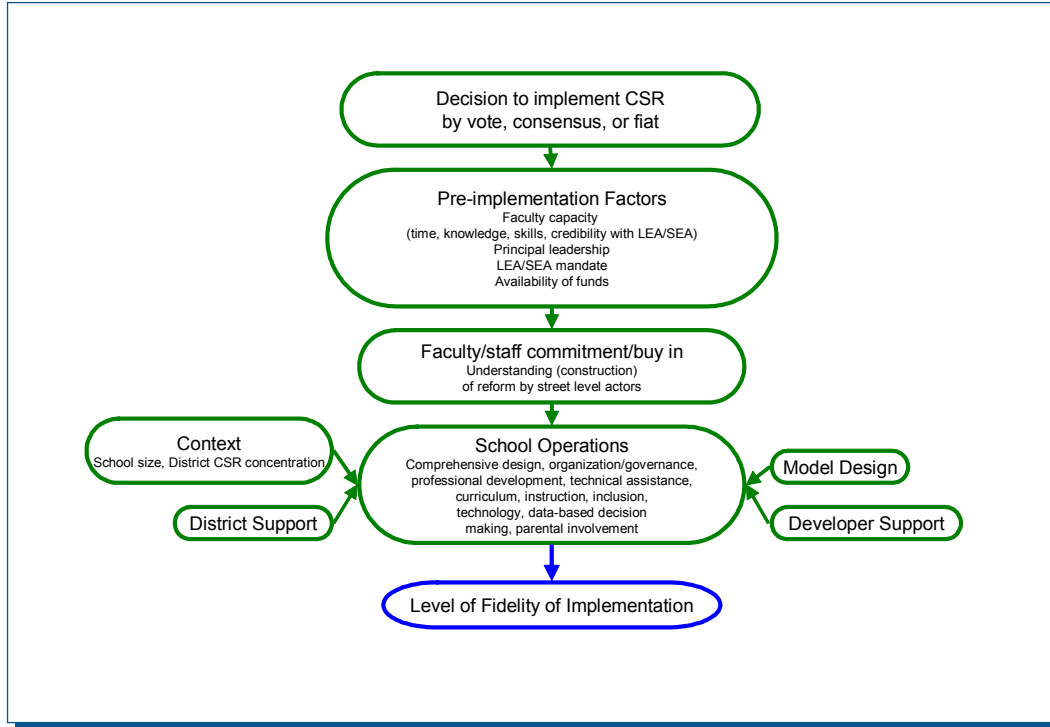


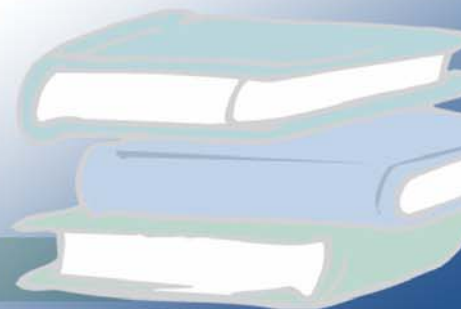
Figure 2. Implementing Change



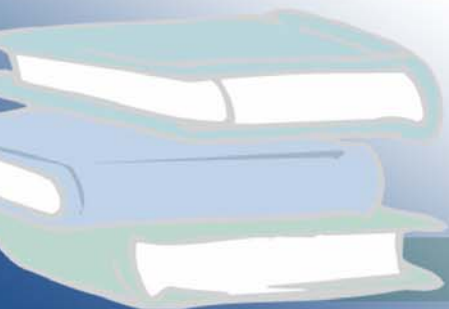
We assume that the fidelity of implementation is affected by CSR model design; that is, by the set of practices and activities in which a CSR model school should be engaged if the school is fully implementing a CSR program. We call this set of practices and activities, as identified by different CSR developers, a CSR model key. In addition, it is hypothesized that fidelity of implementation is influenced by the CSR developer’s support; support from the school district; faculty commitment and buy-in; and both teacher- and school-level characteristics, including contextual measures for schools (poverty, school size, etc.), teachers (English teacher vs. mathematics teacher), and faculty capacity (measures of professional community and experience).

To answer RQ 1, we needed to be able to include in our analysis comparison schools that did not implement any CSR programs, because we do not have data for schools implementing a CSR model prior to the adoption of the CSR model. Our conceptualization of implementation—as the set of practices that a fully implementing CSR model school should be engaged in—made this possible. CSR program developers provided us with implementation keys (principal surveys and teacher surveys filled out as if a school/teacher were fully implementing their respective CSR model). We used those developers’ survey answers to create implementation indices both for schools actually implementing a CSR model and for their matched comparison schools. Therefore, we were able to compare the level of implementation between schools implementing CSR models and their respective comparison schools.

Our four major findings are summarized below.



- ◆ Finding 1: CSR schools do not systematically have higher levels of implementation than their matched comparison schools.
 - According to our results, schools using CSR models are engaged in different practices than their paired comparison schools, but the results are not consistent. Our descriptive results showed only a few statistically significant results. Cross-sectional hierarchical linear modeling (HLM) analysis for years 2002 and 2004 revealed additional differences, but the results were not consistent. Sometimes, CSR model schools had a higher fidelity of implementation than their comparison schools; occasionally, comparison schools implemented aspects of the model more faithfully. The results are also unstable over time: what was significant in 2002 did not remain so in 2004.
 - Some differences that exist conform to our pre-existing knowledge of the CSR models. CSR Model F schools had a higher level of implementation in Use of Assessments, whereas CSR Model C schools had higher fidelity of implementation in Use of Technology and Pedagogy (in 2002). CSR Model A schools did better in implementing Pedagogy than comparison schools in 2002, but this relationship was reversed in 2004.
 - The small number of significant findings and their instability could be due to several factors. First, all schools, whether or not they are implementing a CSR model, may be engaged in a core set of practices that do not vary tremendously from school to school. This lack of differences may be due to the fact that many practices initiated and promoted by different CSR models have been mainstreamed over time. Alternatively, it is possible that, although all schools engage in the same practices, these practices should be conducted in CSR schools with a qualitative difference. Our implementation indices, based on survey data, do capture how often or what level of emphasis should be given to a certain practice, but the data do not include more nuanced information about how a certain practice or activity should be conducted. Furthermore, implementing a CSR model is not likely to be a linear process in which all components of CSR are simultaneously highly implemented. Schools are likely to engage in selective implementation and concentrate on different aspects of CSR models. Thus, only some components of a CSR model may be highly implemented at a specific time. Over time, however, a trend of increased levels of implementation should be detected for most components of CSR models. We did detect an increase in the level of implementation over time (between 2002 and 2004), but this trend took place in both CSR model schools and comparison schools. This common trend explains why we did not detect more differences in 2004 between CSR schools and their matched comparison schools.
- ◆ Finding 2: CSR model keys are significant predictors for the level and change of implementation.
 - Although we found few significant differences between CSR model schools and their matched comparison schools, large differences exist between CSR keys concerning the implementation of different components of CSR models. In other words, the level of implementation is clearly related to the bundle of activities each CSR model recommends or requires as part of its implementation. This effect becomes especially clear because the results are consistent over time (between 2002 and 2004). That is, certain CSR models tend to have lower levels of implementation concerning specific components of that CSR model.



- In our analysis, the CSR Model E and CSR Model F model keys consistently had medium to high levels of implementation. The CSR Model B model key was related to a lower level of implementation regarding Shared Decision Making, Use of Technology, and Inclusion, whereas the CSR Model A model key has particularly low levels of implementation regarding Inclusion and Pedagogy. CSR Model C has the lowest levels of implementation in Student Grouping and Time Scheduled for Instruction. Clearly, the model developers' keys for implementation make a difference regarding the level of implementation. A closer look at the components in which particular CSR programs have lower levels of implementation reveals that the CSR model implementation keys have different levels of difficulty. In other words, some CSR developers demand practices and activities that are not common in most schools, requiring a change in ongoing school operations. Consequently, the level of that implementation tends to be lower.
- This finding raises an interesting question regarding the effectiveness of CSR models in promoting positive change in student achievement. Assuming that profound change in the school operations, from governance to instruction, is required to have a positive effect on student achievement, it is not sufficient that a CSR model is highly implemented if the model does not promote real change. A study of which CSR model key promotes the most positive change in student achievement is beyond the scope of this paper, but the issue requires further inquiry.
- ◆ Finding 3: CSR models are not comprehensively implemented.
 - CSR is supposed to be comprehensive, addressing several dimensions of school operations (governance, PD, assessments, and instruction among others). Our results show that about one fifth of the schools in the study implemented CSR models comprehensively in 2002, and only about one tenth did so in 2004. However, schools implementing a CSR model were more likely to have a high comprehensiveness level than comparison schools in both 2002 and 2004. The low level of comprehensiveness may be caused by 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. Thus, a CSR model implementation is a dynamic process in which the level of implementation of different model components varies at different times. However, the comprehensiveness of CSR implementations should increase over time. In our sample, the comprehensiveness decreased over time, but this finding is likely caused by differentiated attrition (many schools with high levels of comprehensiveness in 2002 are missing in the 2004 sample).
- ◆ Finding 4: The level and change in implementation is more consistently predicted by variables related to agency (such as Principal's Instructional Leadership and Developer's Assistance) than to contextual variables.
 - Our HLM analysis illustrates what factors predict the level and change in implementation. As discussed above, CSR model keys significantly predict the level of implementation for all the implementation indices. Our results also show that Principal's Instructional Leadership, Developer's Assistance, and Teachers' Professional Community are consistently and positively related to the level of implementation across many implementation indices. Similarly, being an English teacher (instead of being a mathematics teacher) is positively related to implementation across the implementation indices we analyzed. 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, do not consistently predict level of implementation. These results illustrate the relatively greater importance of agents (teachers, principals, model developers) in the implementation process compared to the importance of the context. That is, CSR models can be successfully implemented in different environments if the relevant actors are engaged in the process of implementation.

- Contextual variables are not consistently associated with the change in implementation, except for one variable: positive change in Principal's Instructional Leadership increases the level of implementation. This finding once again reinforces the importance of the principal's leadership in CSR model implementation. Measures for Teacher Community and Developer's Assistance do not predict the change in implementation systematically across different implementation indices.

We now turn from a discussion of the four major findings present in our quantitative study of implementation to those findings emerging from our qualitative results. Of particular interest here is the set of findings that shed light on how contextual factors and model design features influence both key stakeholders' understanding of CSR implementation at the school level.

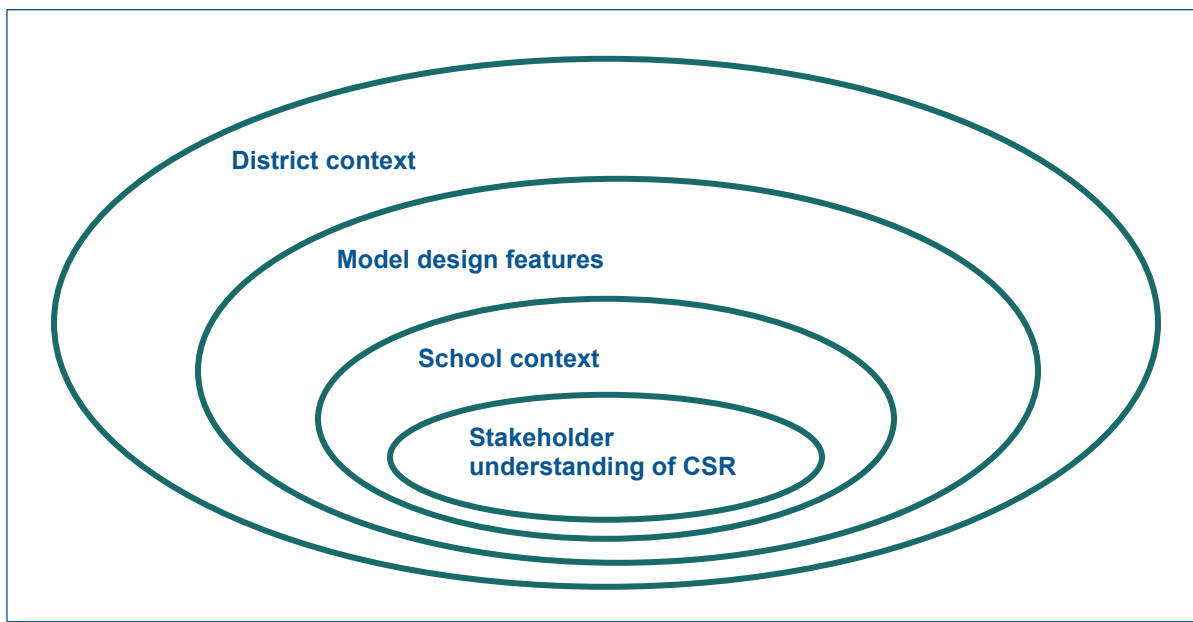
Qualitative Study Data and Results

Our qualitative, comparative case study examined how CSR implementation is understood by school stakeholders. We investigated teachers' and school leaders' understandings of CSR components and how the contextual factors influence the process of implementation. We rated school stakeholders' perceptions of the comprehensiveness and schoolwide nature of their CSR model. Comprehensiveness reflects stakeholders' perceptions of the multicomponent nature of the CSR model; schoolwide understanding is the degree to which stakeholders perceive that the reform is to be implemented across the entire school. We found that stakeholders in the model schools understand that the CSR model is to be implemented schoolwide. Among model schools, more variance occurred in stakeholders' understanding of the comprehensiveness of models, indicating that stakeholders have different levels of understanding of model components. We found five contextual factors to explain the variation among model schools: the challenge of getting buy-in for teachers new to the model, principal leadership activities supporting the implementation process, the alignment of the model with ongoing programs, quality of developer support, and policies that influence stakeholders' decisions to implement model components.

The qualitative component of our study was driven by an interest in examining implementation more closely and in defining how school-level actors understand CSR. The conceptual framework guiding this research depicts the organizational contexts of the school, model design, and district influence the school stakeholders' (principals' and teachers') understanding of CSR (see Figure 3).

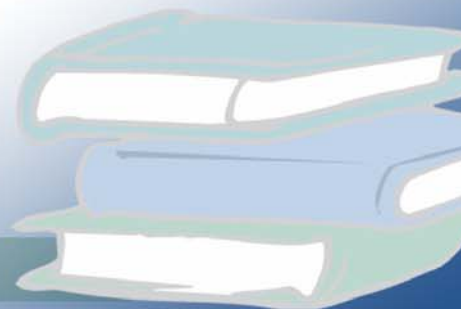


Figure 3. Contextual Factors That Influence CSR Understanding



How school stakeholders interpret a reform and respond to the contextual factors, including district and school factors as well as model characteristics, will influence their understanding—and therefore implementation—of a reform. Findings from research studies investigating the implementation process suggest that implementation varies within and across schools (Desimone, 2000); these variations are in large part caused by school culture and contextual influences. To explain variance in implementation, we explored the concept of teachers and principals as “street-level bureaucrats.”

The role of the street-level bureaucrat is exceedingly critical in the process of implementing services in general and reforms in particular. Understanding the actions and perspectives of street-level bureaucrats—here, principals and teachers—can assist in analyzing the variance in CSR implementation noted above. Michael Lipsky (1980) was among the first to use the term “street-level bureaucrat” to refer to individuals employed by large, multilayered organizations to render public services. This theoretical framework of Lipsky (and others) emphasizes roles taken by individuals working in public organizations as they make policy decisions, taking into account constraining conditions and other contextual factors. Lipsky argued that “decisions of street-level bureaucrats, the routines they establish, and the devices they invent to cope with uncertainties and work pressures effectively become the public policies they carry out” (Lipsky, 1980, p. xii). This is a useful characterization of how teachers and principals engage in implementing CSR reforms, as these individuals interpret the meaning of specific aspects of the reform during its implementation. In addition, teachers and principals are caught up in an organizational context that may either support or undermine reform. Coburn (2001) describes research demonstrating that individuals’ interpretations of policy are strongly affected by both communication with colleagues and the organizational context. Coburn investigated the formal networks and informal alliances among teachers and the role these alliances play in shaping teachers’ sense-making processes, leading to a wide range of interpretations, adaptations, and policy transformations (2001).



Our qualitative research builds on prior research by investigating school stakeholders' understanding of CSR and the influence of contextual factors on stakeholders' understanding and decisions to implement CSR.

Research on CSR implementation processes suggests that implementation varies within and across schools (Berends, 2000; Desimone, 2000). Multiple ways can be used to explore how and why variance in implementation occurs. One way to search for the answers is to probe school stakeholders' perceptions of CSR. As "street-level bureaucrats" who interpret the reform, school stakeholders implement reform strategies based on their understanding of the reform and their negotiation of contextual factors.

CSR is a complex process involving components that address changing multiple aspects of the school structure and function. By the very nature of the name *comprehensive school reform*, stakeholders generally understand that the reform model is to be implemented schoolwide. However, stakeholders' day-to-day implementation of reform components is limited by their understanding of the multifaceted nature of CSR. Contextual factors at the school site, model-design features, and district policies all play a role in influencing school stakeholders' understanding and implementation

The outcomes of implementing educational reform depend on both the resources available and perceptions about reform held by stakeholders in each school. Both stakeholders' perceptions and the availability of resources can vary widely from school to school, thus generating a variety of possible outcomes. Matland (1995) described this decision-making environment as a "garbage can" process, with various stakeholders, problems, solutions, and decision-making opportunities combining to produce outcomes that are difficult to predict. He stated that the conditions required for decision-making opportunities include: ambitious goals, lack of clear behavioral expectations, fluid participation of stakeholders, and policy ambiguities. These conditions describe what we observed in our cases—perceived alignment or misalignment among policies, support or lack of support from model developers and school administrators, as well as other school contextual factors that support or hinder implementation. When these conditions are combined with another common condition, lack of sufficient resources including PD, the opportunities increase for street-level bureaucrats to interpret reform in ways that may result in outcomes very different from those initially intended.

Schools are complex organizations that operate in a variety of environments, with diverse people working in them producing wide variation in the success of implementation. The social organizational structure of the school does not exist in a vacuum. The policy environment surrounding the implementation of CSR has an enormous effect on the reform process (Rowan, Barnes, & Camburn, 2004). Schools need help in crafting policy coherence. Our results also suggest that distributing leadership among teachers does not necessarily ensure a concurrent depth of understanding of their CSR model. Research has shown that increasing teachers' roles in leadership activities is an important aspect of successful school reform (Camburn, Rowan, & Taylor, 2003). To increase the quality of reform, it is necessary to encourage stakeholders to go beyond enacting portions of reform that are congruent with prior understanding. Reform changes must reach the underlying assumptions about how schools operate, how students learn, and what constitutes effective instruction. To be sustainable, these changes must affect the social norms of the school and the pedagogical principles embedded in the curriculum (Coburn, 2003).



Schools as organizations must improve strategies to manage information and develop collective decision-making structures. Just as schools must improve their decision-making processes, district leadership must also change from implementing policy to helping schools learn to negotiate the multiple external demands (Honig & Hatch, 2003).

School reform is a long process that not only takes years to implement but years for teachers to fully understand what the reform model entails (Desimone, 2002, p. 31). In this study, we recognized the importance of analyzing school stakeholders' perceptions to uncover their level of understanding of CSR models. Implementation of reform models is affected by school stakeholders' understanding and is influenced by the contextual factors these street-level bureaucrats negotiate.

In this qualitative case study, understanding of CSR models was defined by two constructs: comprehensiveness and schoolwide use. Comprehensiveness was defined by stakeholders' having an understanding of the multicomponent nature of CSR models. Schoolwide use referred to the degree to which stakeholders perceived the reform as having been implemented across the entire school. In sum, our findings indicated that school-level stakeholders understood the nature of schoolwide reform; however, school stakeholders across schools showed varying levels of understanding the multiple components of models (comprehensiveness). When school-level stakeholders implement a CSR model, some schools are more likely to implement multiple components because they have a more fully articulated understanding of the model. Without systematic implementation across model components, however, the overall implementation suffers (Datnow, Borman, Stringfield, Rachuba, & Castellano, 2003).

School stakeholders' perceptions of different types of contextual factors at their school influence their understanding of their model and the reform effort. School contextual factors centered on teacher induction and principal leadership. Teacher turnover was identified as a major challenge to implementation because new teachers have to buy into the model as well as learn the basics of implementation. Schools that experienced high levels of turnover and had a system in place to teach model activities, philosophy, and components, among other features of the model, had stakeholders who were more likely to describe continued implementation at their school. Similarly, where the principal monitored or made organizational changes to enable implementation of components, the schools were perceived as supporting understanding and implementation.

School stakeholders described model design features, such as the perception of model efficacy and developer support, as supporting understanding and implementation. Stakeholders' perceptions of whether or not model implementation has produced positive outcomes affect their decisions to use model practices. As street-level bureaucrats, school stakeholders decide which components to implement and how to implement them based on their perceptions of these contextual factors. Therefore, school stakeholders who viewed their model as effective in increasing student outcomes, enhancing professional community, and improving instructional practices were more likely to implement the model than those stakeholders who viewed the model as not resulting in positive outcomes. Developer support was viewed as a challenge to implementation if school stakeholders perceived that they did not receive adequate assistance from the developer. School stakeholders who received ongoing and/or onsite technical assistance from the developer were more likely to feel supported in their implementation.



Another contextual factor stakeholders considered was how well the model aligned with other school initiatives at the school, district, state, and federal levels. When stakeholders were able to match the model's activities or goals with ongoing school programs, they were more likely to continue implementation of the model. However, when alignment was not perceived by stakeholders as aligned with state assessments or mandates from the district or federal government, model implementation suffered. The conditions related to alignment of the model with other school initiatives were important considerations for stakeholders and thus influenced implementation.

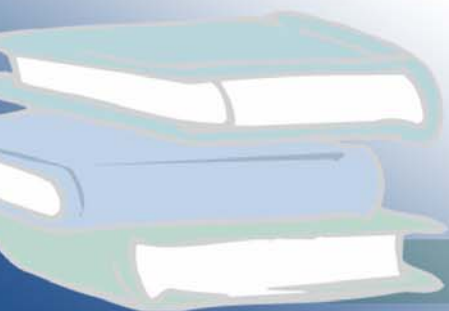
Improving Student Achievement

The results of this study confirm that implementing CSR is a complex process, and its effect on student achievement is still uncertain in some cases. The uncertainty makes it difficult to deliver a simple and direct conclusion on the association between CSR implementation and student achievement. Without controlling for implementation level or implementation length, CSR appears not to have an effect on student achievement. CSR schools often implement components at various levels and paces, not just across schools and CSR models but also in different stages (i.e., young, middle, and old age) of implementation. The sampled CSR schools in this study had various starting levels, and they increased CSR implementation at different rates and paces. Some schools significantly improved implementation in some components from 2002 to 2004. Other schools, however, did not make progress or had even lower levels of implementation gains in later years. On average, however, CSR schools improved the fidelity of their implementation over time. Among schools, the large variation of growth in CSR implementation from 2002 to 2004 indicates an uneven pace in implementation.

Duration of implementation of a specific CSR model does not guarantee an effect on student achievement, as measured by the growth in average achievement made by CSR schools relative to their matched comparison schools. Overall results reveal that CSR schools did not experience larger achievement gains in either mathematics or reading compared with matched comparison schools when not controlling for implementation. Results of various analyses conducted in this study reveal that schools implementing certain components of CSR for 3–5 years were likely to experience significant academic gains. Schools that implemented CSR at high levels were more likely to experience large academic gains than their matched comparison schools and CSR schools that implemented CSR at lower levels. Some CSR schools with lower implementation levels also made greater improvements in student achievement in mathematics or reading but only when they improved implementation level over time. Moreover, the impact of CSR implementation on student achievement varied by CSR model and the subjects being tested (i.e., mathematics and reading). These findings indicate that the impact of CSR implementation on student achievement is conditional on implementation level, components, number of implementation years, and the specific CSR model. As such, studies that do not take into account all conditions will result in mixed findings regarding the relationship between CSR implementation and student achievement.

Achieving Sustained Implementation

As an extension of this study's main RQ regarding the implementation of CSR, we examine whether dropping or switching a CSR model is the most extreme form of lack of implementation or whether schools can drop their relationship with a CSR model but continue to exhibit practices that look very much like those developed as part of their former CSR model. In this paper, we address two questions about the sustainability of CSR: (a) What factors make schools more likely to sustain their reform



relationships with CSR model developers (i.e., less likely to drop or switch their CSR model)? and (b) Does CSR model implementation cease after a school formally drops its model or does it persist as a product or residue of prior implementation?

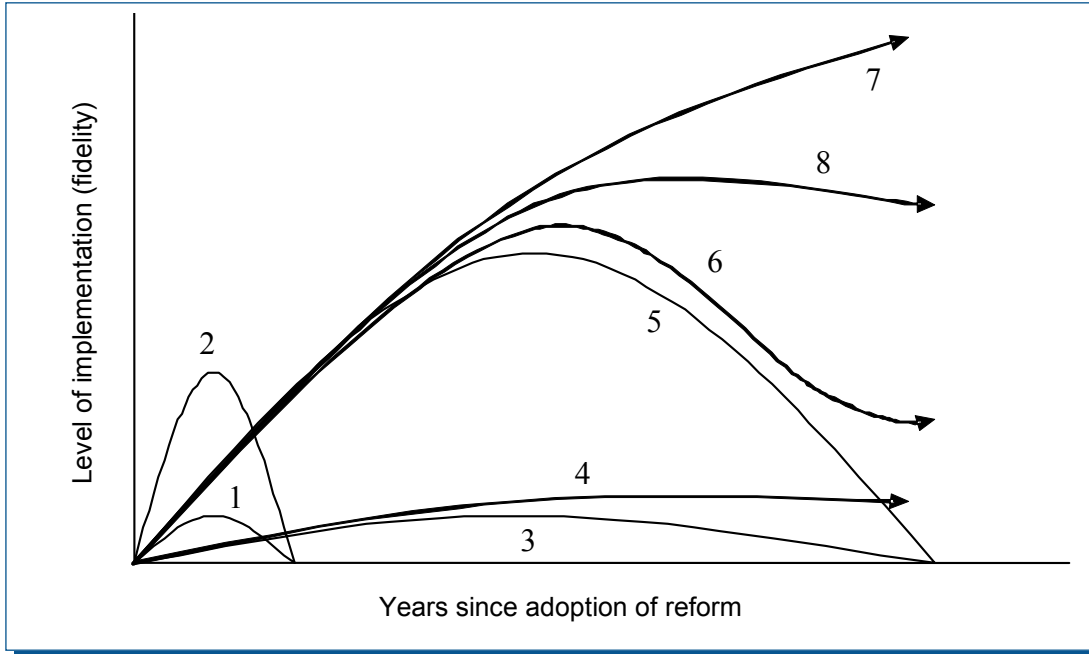
We continue to explore the lifecycle of CSR efforts by examining the end-of-the-reform effort. For a CSR effort, as with any reform, at least eight concluding scenarios are possible:

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.

Figure 4 depicts the theoretical trajectories for these eight scenarios in terms of their level of implementation fidelity over the years since the adoption of their reform. As this figure reveals, the scenarios separate into four pairings; the key theoretical and substantial differences are among the pairs (with only minor differences within the pairs). The first pair (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 represents superficial implementation, where schools name their program but exhibit little evidence of the practices associated with that program. The only difference between the scenarios (3 and 4) in this pair is whether the name of the reform effort was eventually dropped or retained. In contrast, the third pair (5 and 6) exhibits substantial implementation of the practices related to their model at one time, but they have since abandoned many or most of those practices. Finally, sustained reform is only found in the fourth pair (7 and 8), where the practices of the reform program remain clearly evident. The distinction between the scenarios in this pair is subtle, but this analysis will clarify the difference. The key to the distinction is that schools in scenario 7 dissolve their relationship with their reform program and developer organization, but potentially they can sustain the practices learned from that program or model if those practices have become taken for granted, internalized, or ingrained in the life of the school. Schools in scenario 8 retain their existing reform effort but infuse it with the flexibility to adapt continuously to changing environmental demands. (Schools in scenario 8 have a lower implementation level in the figure because the measure of implementation is one of fidelity to the original specifications of the reform effort from which these schools diverge to sustain the viability of the reform.)



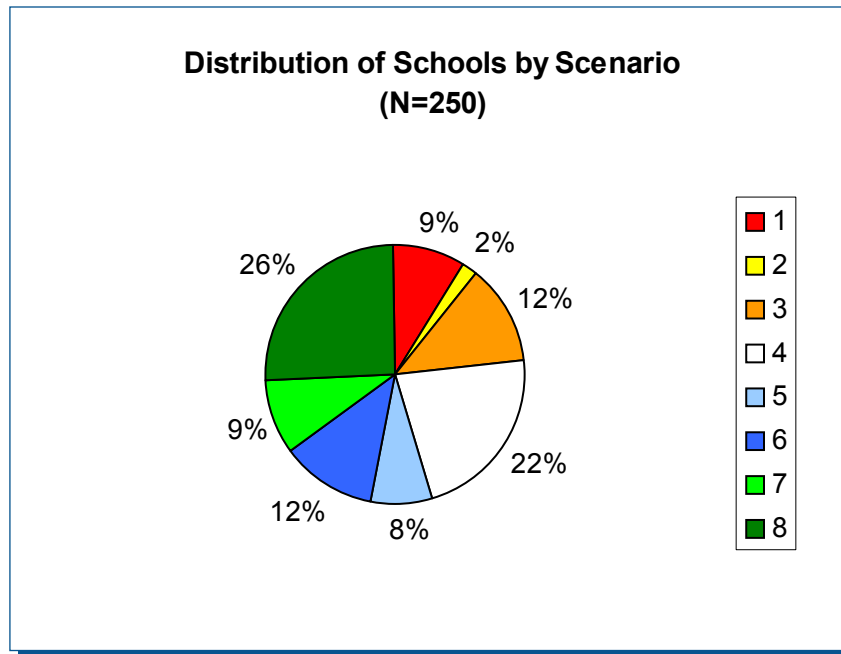
Figure 4. Reform Trajectories



In relation to these possible endings, the literature on school reform (e.g., Tyack & Cuban, 1995) generally indicates that very few efforts have fallen into the final pair of scenarios representing sustained implementation of reform. For illustrative purposes, the pie chart in Figure 5 shows how schools analyzed in this paper (with implementation data available) are roughly distributed among these eight scenarios. The two green slices on the left of the pie chart (scenarios 7 and 8) indicate that 35% of CSR schools appear to have achieved one of these two versions of sustained reform. However, all the remaining segments represent some form of unsustainable reform. Furthermore, the schools that dropped their relationship with a model developer can be found in the slices representing both unsustainable reform and sustained reform (i.e., the 9% of schools represented by slice 7).

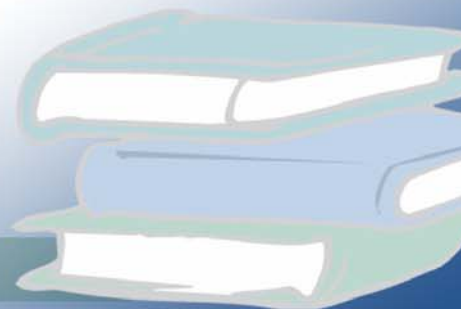


Figure 5. Concluding Scenarios for Reform



The greatest challenge to CSR is sustaining reform over a time period long enough to produce substantial effects. By examining how CSR schools complete their lifecycle, we can begin to understand 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 for more than a decade). The results indicate 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 PD supports for the CSR effort appear to be the most significant of this interrelated set of sustainability factors. These results emphasize the critical role that teachers' human resources of knowledge, skills, and commitment as well as faculties' social capital play in sustained reform but also place 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. Still other schools may be switching to a new reform program and selecting just a few of the practices prescribed by this CSR model to sustain and layer on top of 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

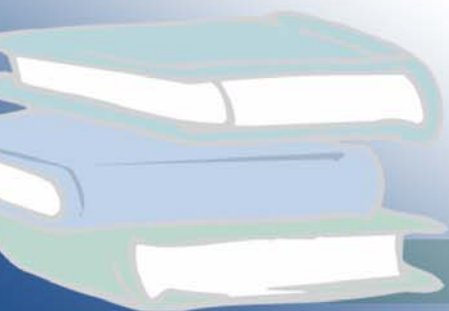


exploration of sustainability requires examination of schools' implementation of reform-prescribed practices over several years. Just such an analysis shows that—although dropping a CSR model affiliation is significantly related to decreases (or less of an increase) in implementation fidelity—the magnitude of the effect is relatively fairly modest, a reduction of 5%. Without a precipitous drop in implementation due to dropping this affiliation, 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 institutionalized the practices of their CSR model, and which have adapted and enhanced the original model in the spirit of continual school improvement. The analyses do make it clear that, on average, the effects of CSR models can persist beyond the formal discontinuation of the reform relationship.

Nearly one third of CSR schools in our analyses dropped their relationships with their CSR developer or their affiliation with the reform. Furthermore, those that dropped their relationships experienced a marginal decrease in their level of implementation. Although these facts seem to indicate an apparent lack of sustained CSR, even those schools that ended their reform relationships appear to have sustained their implementation of many of the practices of their programs. Although we did not see an overall picture of schools disengaging with their CSR model developers because the schools have institutionalized the practices and can self-sustain their improvement efforts, we did not see schools that drop their relationships also dropping precipitously in their level of implementation fidelity.

Reformers and practitioners need to redesign for sustainability. Although CSR developers did design at least implicitly for sustainability, they have learned a series of lessons about how to adapt their models and their practices to better sustain reform. Those models that are very specific and concrete about what they want teachers to do often accomplish a high level of surface implementation fidelity. However, it has gradually been shown that school leaders and teachers need to understand better the underlying tenets of the reform and need some degree of flexibility to adapt their implementation to local circumstances. This understanding and flexibility is needed to sustain their reform and deepen its implementation. Developers of reforms need to decide where they can compromise on certain specific practices to sustain the larger effort. In addition, developers must figure out where practices are not negotiable because they are critical to their research-based instructional core principles and practices. Perhaps most importantly, model developers need to re-examine their fairly common practice of gradually pulling back from schools and reducing their PD and technical assistance activities so that schools can become self-sustaining, even as the developers turn their attention to other sites. Coburn (2003) argues that CSR model developers need to rethink scale. On the basis of our findings, we agree that many of the CSR schools face six or more of these sustainability risk factors and that sustained PD and developer technical assistance are one of the key risk factors. Thus, dropping a relationship with the developer of a reform is associated with at least a marginal decrease in implementation. If they are to sustain the implementation of the practices they advocate, CSR model developers need to sustain their relationships with their existing schools, attain fairly high levels of implementation, sustain the level of assistance they provide over time, design to accommodate teacher turnover, and increase their use of political persuasion at the district level. In sum, CSR model developers need to focus on digging in rather than spreading out.

First and foremost, districts need to consider how to create coherence and stability in their overall reform strategy. Although we lacked the measures necessary to quantitatively confirm or disprove their reports,

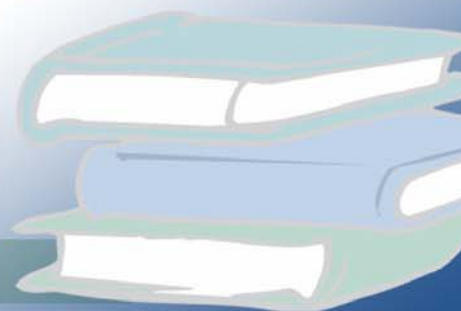


respondents in our study reported loss of district support as the primary reason for dropping their relationship their CSR model. Districts need to develop strategies to sustain district support; to change personnel but sustain mission (e.g., leadership succession strategies, faculty retention strategies designed to replace exiting CSR teachers with other teachers trained in the same CSR model); to consider the overall coherence of the district's instructional program before layering an additional competing reform program on top of the residue from the previous history of fragmented and incoherent reform; and to practice patience by investing in sustained and deep implementation of reform and formative evaluation of outcomes that are leading indicators of academic achievement. Only then, after reform has had time to have an effect, should summative evaluation follow to determine if it is wise to sustain further implementation. In addition, districts need to pay special attention to CSR implementation in schools that experience multiple risk factors for unsustainable reform relationships as well as in elementary schools, smaller schools, and more disadvantaged schools—all of which had lower average initial levels of implementation.

Schools need to pay close attention to buffering themselves from waning district support and to invest in faculty retention, induction of new staff, and efforts to sustain PD. Schools need to build the human and social capital that provides the local capacity to sustain a reform effort. Furthermore, schools need to consider the consequences of dropping their affiliation with a CSR model. Of course, it is not clear from this analysis that sustaining the practices of any specific CSR model actually leads to improved outcomes. In some cases, schools are entirely justified in dropping a program that has been impossible to implement or has not produced effects within a reasonable time period. It is clear, however, that schools that drop their relationship with their CSR model developer decrease in implementation, although the decrease is not as dramatic as one might have imagined.

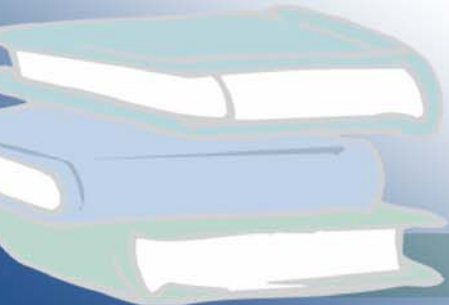
Researchers should be clear about what is being sustained. We recommend focusing research on sustained implementation of reform practices and sustained effects. First, researchers need to evaluate the degree to which schools consistently implement their treatment over time and examine the outcomes for schools that sustain high levels of treatment over time and those that stop implementing the practices prescribed in their treatment regime (i.e., take a dosage–response perspective). Evaluators need to consider how to treat methodologically those schools that end their participation in a treatment, how to track those schools, and whether a treatment gets the credit or debit for those schools' gains and losses. Second, more research is needed to understand the dynamics of sustainable reform, especially the interaction among multiple sustainability factors. Third, as is often the case, researchers need to extend their time frame. CSR models, like many reform programs, take place over 5 or more years and often claim to begin producing academic gains only after the third or even fifth year. Last, researchers need to consider whether sustaining one particular reform model is always a good thing. Studies need to examine whether improvements are better sustained within a single reform or whether there is a time when schools should switch to a new reform to sustain academic gains and continual improvement.

This paper provides a quick overview of the major, yet preliminary, findings of our work. More detailed discussions of each phase of the CSR lifecycle—Initiating Reform, Implementing Change, Improving Student Achievement, and Achieving Sustained Implementation—can be found in papers we and our colleagues prepared for this conference (Cotner, Herrmann, Borman, Boydston, & LeFloch, 2005; LeFloch, Zhang, & Herrmann, 2005; Kurki, Aladjem, and Carter 2005; Taylor, 2005; Zhang, Shkolnik, & Fashola, 2005).



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