



# Sustainability: Examining the Survival of Schools' Comprehensive School Reform Efforts

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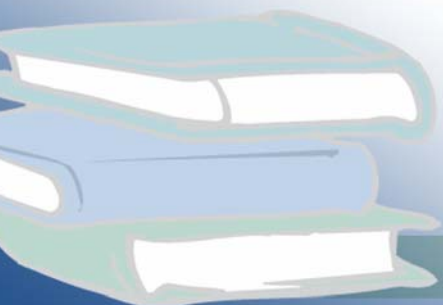
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American Institutes for Research®

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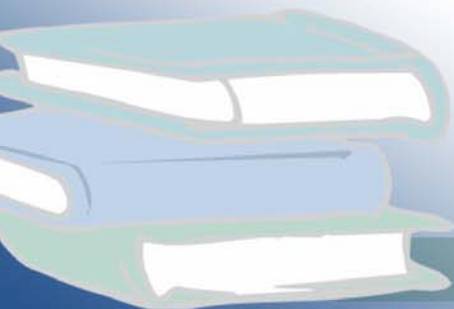
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# Sustainability: Examining the Survival of Schools' Comprehensive School Reform Efforts

## Abstract

*One of the greatest challenges, if not the greatest challenge, to comprehensive school reform (CSR) is sustaining reform over a time period long enough to produce substantial effects. By examining how comprehensive school reformers complete their life course, this paper highlights the importance of studying sustainability as well as the importance of being clear about what is being sustained. It is critical to distinguish between a sustained reform relationship and sustained implementation of a reform. We examine a sample of 395 urban, disadvantaged, low-achieving elementary and middle schools using CSR in 2001–2002 and find that nearly one third of these CSR schools ended their relationships with their model developers by the end of 2003–2004. However, the remaining two thirds of schools have successfully sustained a reform relationship for more than 3 years, and in some cases more than a decade. The results of Analysis I indicate that 11 risk factors for discontinuing a reform relationship operate in combination to dispose schools toward dropping their CSR affiliation. Resolving faculty retention problems and providing professional development supports for the CSR effort appear to be the most significant of this interrelated set of sustainability factors. Analysis II shows that although dropping a CSR model affiliation is significantly related to decreases in implementation fidelity, the magnitude of the decrease is relatively small. Without a precipitous decline in implementation due to dropping, it is clear that many schools that formally drop their affiliation with a reform developer must still be sustaining many of the practices prescribed by the CSR model developers. Therefore, in many urban, disadvantaged, low-achieving schools, the influence of CSR models can live beyond the formal discontinuation of the reform relationship.*



# Sustainability: Examining the Survival of Schools' Comprehensive School Reform Efforts

## The Last Stage of the Reform Life Cycle: Dying Young, Passing Away, or Leaving a Legacy

Understanding the history of unsustainable reform in the U.S. educational system, the architects of comprehensive school reform (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., Bodilly, 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 the National Longitudinal Evaluation of Comprehensive School Reform (NLECSR) that one of the greatest challenges, if not the greatest challenge, to comprehensive school reformers is sustaining reform over a time period long enough to produce substantial effects.

Nevertheless, many studies often treat discontinuation of a reform as a nuisance rather than the subject of the research. In contrast, we see the sustainability of reform as critical to our understanding of CSR and hope to take advantage of our longitudinal data collection and relatively large sample of CSR schools to directly examine these important questions of CSR discontinuation and sustainability. As an extension of this study's main research question 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: 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, Does CSR model implementation cease after a school formally drops its model or does it persist as a product or residue of prior implementation?

Building on the previous papers, here we continue to explore the lifecycle of CSR efforts by examining the end of the reform effort. As with any reform, for a CSR effort there are at least eight possible concluding scenarios:

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.



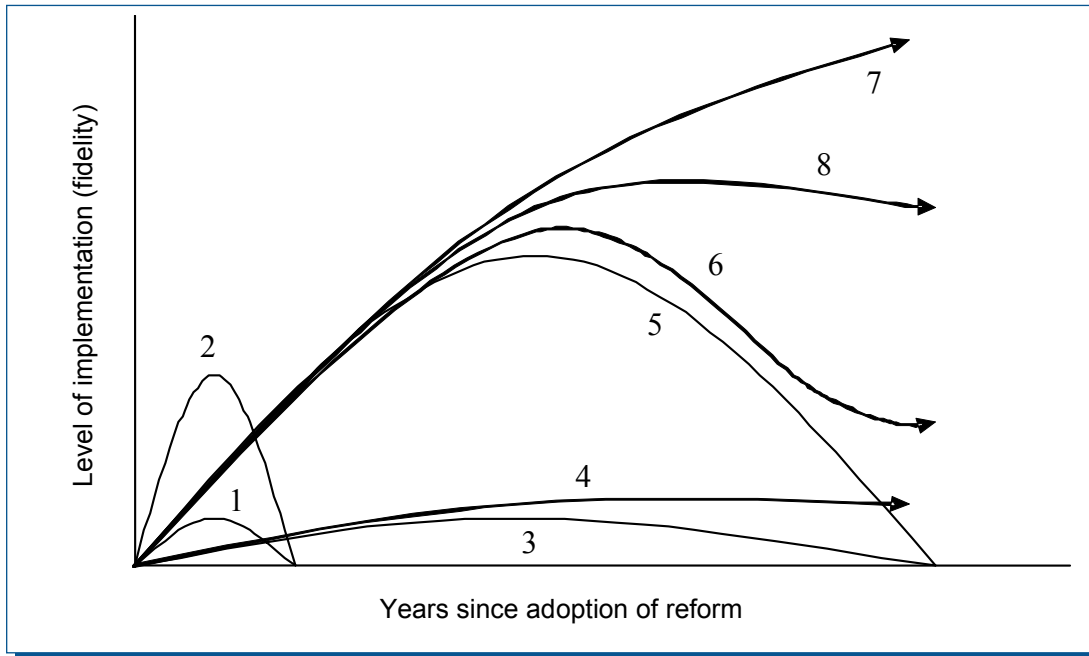


5. *Transient reform* establishes itself, changes the system, and then passes away leaving little evidence that it ever occurred.
6. *Temporary reform* establishes itself, changes the system, but gradually gives way to the forces of inertia and persists in name only.
7. *Sustained implementation* is 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 1 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 with the key theoretical and substantial differences among the pairs (and 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 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 will hopefully become clear in this paper. The key to the distinction is that scenario 7 schools dissolve their relationship with their reform program and developer organization but potentially can sustain the practices they learned from that program or model if those practices have become taken for granted, internalized, or ingrained in the life of the school. Scenario 8 schools retain their existing reform effort but infuse it with the flexibility to continuously adapt to changing environmental demands. (Scenario 8 schools end up with lower implementation 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 in order to sustain the viability of the reform.)



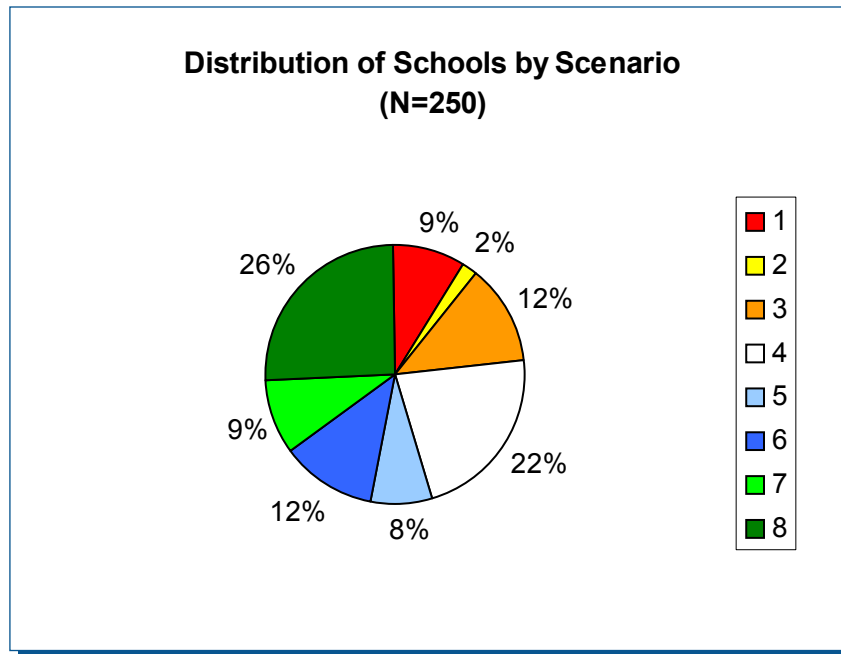
**Figure 1. Reform Trajectories**



Of these possible endings, the school reform literature (e.g., Tyack & Cuban, 1995) generally indicates that very few school reform efforts have fallen into the final pair of scenarios representing sustained implementation of reform. For illustrative purposes, the pie chart in Figure 2 shows how schools analyzed in this paper (with implementation data available) are roughly distributed across these eight scenarios. From the two green slices on the left of the pie chart, we see that 35% of CSR schools appear to have achieved one of these two versions of sustained reform. However, all the remaining slices of the pie represent some form of unsustained reform. Further, the schools that dropped their relationship with a model developer can be found in the slices representing both unsustained reform and sustained reform (i.e., the 9% of schools represented by slice 7).



**Figure 2. Concluding Scenarios for Reform**



## Understanding Sustained Reform and Its Prevalence

### ***Defining a Sustained Reform Effort and Sustained Implementation of a Reform***

To address our research questions, we need to define sustained reform and remind ourselves of the definition of implementation used in the previous NLECSR papers. In this paper, we attempt to distinguish “a sustained reform effort” from “sustained implementation of a reform.” We define *a sustained reform relationship* as a continuing formal relationship between a school and several external entities (e.g., CSR model developer, curriculum provider, university) to reform a school over the years. We define *sustained implementation of a reform* as consistently high levels of fidelity to the practices of a reform program over the years.

Because sustained or sustainable reform has meant several different things in the CSR literature, it may help to reexamine that literature here, keeping in mind the distinction we hope to draw. Although there is still relatively little literature on the sustainability of CSR, there are examples of the use of both ideas defined above and, as yet, there has been no distinction drawn between the two.

Several researchers conducting empirical studies of CSR have confronted the situation of schools dropping their relationships with CSR model developers, or *unsustained reform relationships*. For instance, in a five-state study for the Southwest Education 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 reform effort associated with an external CSR model developer. Importantly, she distinguishes the six schools that dropped their reform effort 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 assumption that once these 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 a 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, 1992; 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 dropping 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 great detail in the companion paper, “Implementation: Measuring and Explaining the Fidelity of CSR Implementation” (Kurki & Aladjem, 2005; 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 the companion paper 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.

### **Measure of Implementation**

We operationalized this process by asking CSR program developers to fill out the same survey instruments (principal and teacher surveys) as our survey respondents, as if they were a fully implementing school. We compared the survey answers from our principals and teachers to their respective CSR developer's answers, and calculated the distance between the ideal developer-specified implementation (developers' answers) and the actual implementation taking place in schools (principals' and teachers' answers). Squared Euclidean distance was used to calculate the difference between developers' and principals' and teachers' answers, and the distance measure was transformed to percentage of implementation to further intuitive interpretation of the results (see Kurki & Aladjem, 2005, for full description). As a result, our measure of implementation can be understood to measure how fully a school is engaged in the practices that a fully-implementing CSR program school should be engaged in.

Calculating the distance between developers' ideal answers and principals' and teachers' actual answers produced implementation scores for 13 specific components derived from CSR. We have converted each of these scores into 1 minus the percentage of the maximum distance from fidelity such that a score of 100% represents complete fidelity or full implementation and 0% represents the lowest possible level of implementation fidelity. Teachers' scores were aggregated to the school mean. We calculated implementation scores for schools that were using particular CSR programs during school year 2001–2002 based on their responses in 2001–2002 and then again in 2003–2004. Most of these schools sustained their relationship with their model developer throughout this period, but approximately one fourth of the schools ended their relationship before the 2003–2004 survey was administered. For these schools that dropped their relationship with their model developer, implementation scores in 2003–2004 were calculated based on the same affiliation they held at the time of the previous measurement of implementation in 2001–2002.

### **Prevalence of Unsustained Reform Efforts**

Before we proceed, it is also reasonable to define the scope of the problem of unsustained CSR relationships both in previous research and in this study. Berends et al. (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, AIM (2003) finds that 25% (27 of 106) of the responding schools had discontinued their original CSR model by approximately the fifth year after adoption. Evans et al. (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).

In our study's larger sample we have found that the rate of unsustained reform relationships is in line with previous research at 32.9% (130 of 395 schools). Table 1 reports the numbers and percentages of CSR schools that dropped or switched their reform effort in each year of the study. For example, of the 395 schools in 21 districts that were implementing a CSR program in 2001–2002, 73 (18.5%) schools dropped



or switched their CSR program before or during the next school year, 2003–2004. In this period, 12.9% of the schools reported dropping their program altogether and 5.6% reported that they had dropped their CSR program and switched to a different one.

**Table 1. Number and Percentage of Schools That Dropped or Switched Their Relationship With a CSR Model**

N = 395 Schools	Dropped or switched relationship with CSR model		Dropped relationship with CSR model		Switched relationship to another CSR model	
	N	%	N	%	N	%
2002–2003	73	18.5	51	12.9	22	5.6
2003–2004*	77	21.3	54	14.7	25	6.8
2002–2003 or 2003–2004	130	32.9	92	23.3	38	9.6

\*The total number of schools is less than 395 for 2003–2004 percentages because 33 schools are missing on the dropped relationship variable and 26 are missing on the switched relationship variable.

There are at least two reasons these numbers are slightly higher than previous studies. First, being a more recent data collection, our data contain a set of schools that adopted CSR rather late in the CSR cycle. These late-adopters may have been more likely to adopt to provide political cover for a different existing reform effort, to adopt simply in order to get a CSR grant, or to adopt to mimic other schools’ reform such that they are not well-suited to their needs. Second, our data contain a wider range of CSR models than most previous datasets. Whereas Berends et al. (2001) focus on the few most prevalent, national CSR models, NLECSR data have a broader scope, including a vast array of schools using those nationally scaled-up models, less prevalent regional models, as well as locally developed models funded through the CSR program. It is important to note that the NLECSR sample comprises elementary and middle schools in largely urban districts, and these schools are generally lower achieving than the district average. Nevertheless, these are fairly representative of the type of schools that CSR developers have targeted in their efforts to work in the most disadvantaged schools and very similar to the other studies’ samples with the exclusion of high schools.

In the sections that follow, we will develop a general model of the factors that underlie sustainability (for both *a sustained reform relationship* and *sustained implementation of a reform program*), explain the data and methods that we use in this paper, present the results of our two separate analyses of sustainability of reform relationships and sustainability of reform implementation, discuss those results, and conclude with a set of limitations to these analyses and implications that can be reasonably drawn from our results.



## Sustaining Factors

What factors make schools more likely to sustain their CSR efforts (i.e., less likely to drop or switch their relationship with their CSR model)? Existing research has argued that sustainability is associated with an array of variables but most of these variables are conceptually underpinned by 1 of the following 11 factors:

1. High local school capacity (e.g., Stringfield, 1998; Reynolds, Stringfield, Creemers, & Teddlie, in press; Florian, 2000)
2. A supportive political context (Bodilly, 1998; Yonezawa & Stringfield, 2000; Florian, 2000; Berends et al., 2001; Datnow, 2001)
3. Sufficient funding (Berends et al., 2001; AIM, 2003; Evans et al., 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. 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 and Stringfield, 2000; Moffett, 2000; Florian, 2000) and model developer assistance (Berends, et al., 2001)
11. Protection from competing reforms (Datnow, 2001; Evans et al., 2004)

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 local school capacity is likely to be strongly related to whether schools can sustain their reform efforts. Berends et al. (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 general three 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 given 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 et al. (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.

Given that the existing research has not yet fully explored the phenomenon of schools dropping CSR models, we felt it was important to collect and consult qualitative data from the principals and teachers in the study to better understand their reasons for dropping their CSR model. We have drawn upon open-ended responses on the principal questionnaire as well as transcripts of structured interviews in order to develop and refine our model of the factors affecting schools' decisions to sustain or drop their CSR model. Questions were asked only of those schools that dropped their reform model, so it is not clear whether factors such as a loss of district support were also present in the schools that sustained their relationships with reform models.

Table 2 presents the numbers and percentages of principals and teachers who reported each of several response options as the reason(s) for their school's ending its reform effort. The results indicate that losing district "support," losing funding, losing faculty commitment to the reform, and reaching the end of a contract with a reform developer were the most frequently cited reasons for ending a reform effort. These factors, as well as several options that teachers frequently reported, including lack of positive student outcomes, losing principal support, and new competing reform efforts, overlap almost completely with the 11 factors derived from the literature, with the exception of reaching the end of the contract.





**Table 2. Reported Reasons for Dropping a CSR Program**

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

Interview data were collected from 24 schools within the larger set of NLECSR schools as part of a supplementary set of comparative case studies. Several of these schools dropped their CSR model just prior to or during the data collection, and 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 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 . . . offices for these kind of efforts that 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.

## Does Unsustained Reform Mean Unsustained Implementation?

The second major question we address is: Does the implementation of a particular CSR model cease after a school formally drops or switches its model, or does it persist as a product or residue of prior implementation? AIM’s (2003) study, although not conclusive, suggests that many reform practices likely persist after the discontinuation of a CSR program. Evidence from our case studies further leads us to expect that rather than seeing a dramatic decrease in implementation fidelity after program discontinuation, at least some schools will exhibit sustained implementation of the practices learned during their work with their CSR model. For example, when asked about the school’s use of its CSR model, one teacher responded that the program was inactive but that some residue of the pedagogical approach from the CSR model 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.

[Interviewer: What kind of things do you implement still?] Just as far as higher order thinking skills. We teach above the students. It would be on the lines of just using different strategies where the students wouldn’t be, we’re not teaching to them at their level.

[Interviewer: How long has it been like technically over then? But even though you’re still using some of the . . .] Technically I would say maybe a year or 2. I really can’t gauge but we haven’t been, I know I haven’t been to any seminars out of state so I would say 2 . . . 2 years at the most.

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:

CSR?

[Interviewer: Comprehensive school reform, the (model name) model.] Oh! I’m like, we have so many things. Letters going on, okay 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, 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. . . .

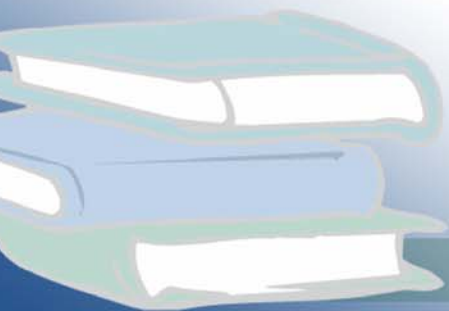
[Interviewer: If we could think back to the adoption and implementation of the (model name) model . . . I thought it was wonderful; I really did. I thought it was wonderful. We had support from those that were helping us along with the [Model name] who introduced it to us. If there was a problem that came out, if we needed professional development, they were there. They kinda



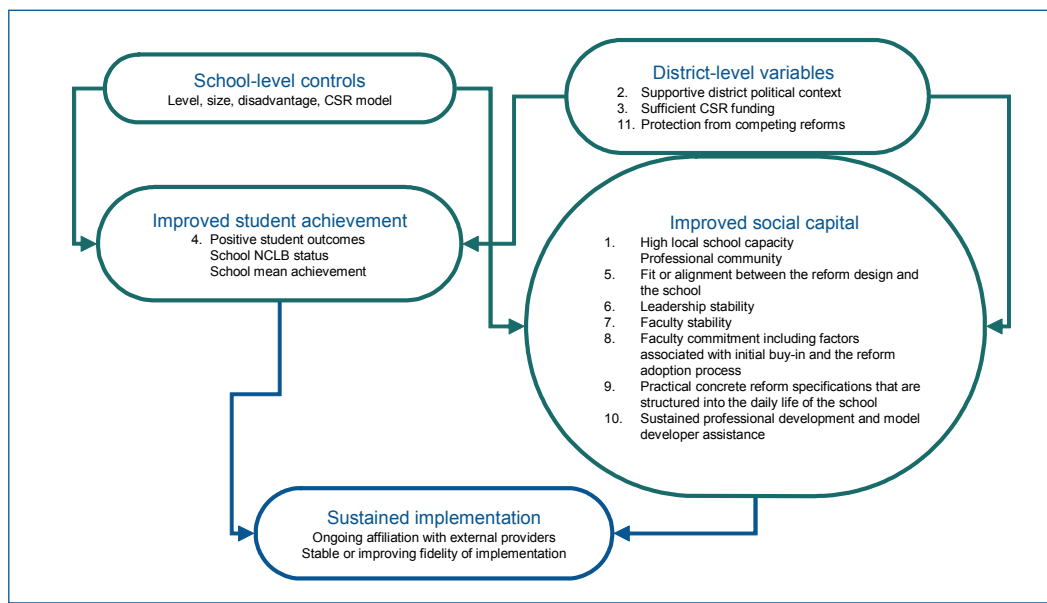
came in and showed us that it's not something new, totally set aside, but something that you can actually work with in the classroom. I thought it was a wonderful thing, you know, when we had the funding we had all the pieces. Right now we're working with a broken puzzle so we have a little bit of this 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.

It appears likely that CSR programs persist after they have been formally dropped, but the question remains as to how critical a moment or strong a determinant the event of dropping a relationship with an external CSR model developer is to future levels of implementation. The second analysis below will examine the degree to which the level of implementation fidelity drops after a school drops its relationship by comparing the change in implementation in dropping schools against the change in those schools that sustain their reform relationships. The answer addresses a basic part of the initial CSR logic. The idea is that after 3 or so years, schools should be able to disengage from the external model developer and become self-sustaining. The answer also addresses the practical operation of CSR in the field where CSR grants typically end after 3 years, and schools are expected to fund and otherwise sustain their reform efforts without the staffing and professional development those CSR funds once provided. Another practical matter in the field is the typical departure of or reduction in services by external model developers either due to lack of funding or as part of the model developer's plan to shift its resources to scale-up activities in newly adopting schools.

Based on our review of the existing literature and our analysis of the reports of reasons for dropping by principals and teachers in our survey and case study data, we have developed a general model of the factors related to sustainability (both a *sustained reform relationship* and *sustained implementation of a particular reform program*). The model is depicted in Figure 3 on the following page.



**Figure 3. Sustainability Logic Model**



## Data and Methods (Analyses I and II)

These analyses focus on the subset of NLECSR schools that were using a CSR model during 2001–2002. As discussed above, nearly one third of these schools dropped or switched their model during our evaluation (2002–2003 or 2003–2004). For Analysis I, exploring the factors associated with sustaining a reform relationship, the sample comprises 395 CSR schools, but we analyze a subset of 250 of those schools because implementation data were not available for all CSR models. For Analysis II, where the outcome is the level of implementation, we analyze this same subset of 250 CSR schools.

Both samples comprise primarily urban, disadvantaged, low-achieving schools. Further, it is important to note that we were unable to restrict our sample to schools beginning their first year of CSR. Twenty-six percent of these schools adopted their CSR program during the first year of the study or 1 year prior to the beginning of the study, 56% adopted a CSR program 3–5 years prior, and 18% adopted more than 5 years prior. Therefore, the large majority of the schools in these analyses had already sustained their reform effort for several years (for more than a decade in the four most extreme cases) when the study began.

### ***Analysis I: Multilevel, Nonlinear Model of Sustainability of Reform Relationships***

We model the likelihood of schools dropping or switching CSR programs as a function of district and school (including CSR model) variables using a multilevel, nonlinear model. We expect the measures of the 11 risk factors discussed previously to be associated with a lower probability of dropping or switching CSR programs in the next year.



Let  $Y_{ij}$  be a binary variable indicating whether school  $i$  in district  $j$  dropped or switched programs in the 2002–2003 or 2003–2004 school years. A value of 1 indicates that school  $i$  dropped or switched its CSR program. The probability model of dropping or switching CSR programs can be given as:

$$prob(Y_{ij}) = \phi_{ij}$$

The nonlinear model for the odds of dropping or switching CSR programs is

$$\eta_{ij} = \log[(\phi_{ij})/(1 - \phi_{ij})] = \beta_{0j} + \sum_{k=1}^n \beta_{kj} (x_{School\ variable})_{ij} + r_{ij}$$

Where  $\eta_{ij}$  is the odds of dropping or switching programs and  $\beta$  is coefficient of school variables  $x$ , for all  $k = 1$  to  $n$ . The connection between the odds of dropping or switching CSR programs 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.

$$\phi_{ij} = \frac{1}{1 + e^{-(\gamma_{00} + \gamma_{01} (District\ variable)_j + \gamma_{02} (District\ variable)_j + \sum_{k=1}^n \gamma_{k0} x_{ij} + r_{ij})}}$$

## **Analysis II: Multilevel Linear Model of Sustainability of Implementation**

To analyze the change in a school's implementation from before to after the school dropped its relationship with its CSR model, we rely on longitudinal data from the teacher questionnaire. To analyze these data we build a three-level HLM model in which the change in level of school implementation, measured as the mean across our component implementation indices, is predicted by teacher-, school- and district-level variables. If discontinuing a reform relationship represents a critical event in the lifecycle of reform, schools that dropped their relationships with their CSR model will have greater decreases in their level of CSR implementation than those schools that continued their relationships with their external CSR model developers.

$$Y_{ij} = \pi + \sum \pi^* X + \beta_{0jk} + \beta_{1jk} + \sum \beta^* W + \sum \gamma^* Z + \varepsilon_{ijk} + r_{ij} + u_{jk}$$



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;

$\pi$  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;

$\beta_{0jk}$  is the average school level of implementation across both years;

$\beta_{1jk}$  is a dummy coded 1 if the year is 2003–2004. The coefficient on this variable represents the change in level of school implementation from 2001–2002 (prior to ending a reform relationship for all schools analyzed) to 2003–2004 (after some schools have dissolved their reform relationship);

$\beta$  is a set of coefficients to be estimated for school variables;

$W$  is a set of school variables;

$\gamma$  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  $\varepsilon_{ij}$  are assumed to be normally distributed with a mean of zero.

## Measures

For Analysis I, the dependent variable is a binary variable code 1 if the school dropped or switched its affiliation with a CSR model developer organization. In 2002–2003 and 2003–2004, principals were asked if their school was still implementing the same CSR model as last year. If principals responded that they were no longer implementing that model or that they had dropped last year's model and adopted a new model (in either year), their school was coded as having dropped its CSR model—as having not sustained their reform relationship.

For Analysis II, the dependent variable is the measure of implementation fidelity described above and in more detail in the companion paper on implementation (Kurki & Aladjem, 2005). Teachers' reports provide the data to calculate fidelity of implementation scores on several component indices with scores running from 0% to 100%. In order to provide an overall picture of implementation for this paper, all of the component indices were combined into a single general index of implementation by taking the mean across the components. In this analysis of sustained implementation, which uses the structure of the hierarchical model (i.e., school-level slope as outcome) to estimate the faculty's level of implementation in 2004 adjusting for their 2002 level, the analysis also accounts for several teacher level covariates (e.g., subject taught, tenure at the school, grades taught) in order to control for changes in the composition of the school's faculty over time.



In both analyses, we include a series of variables that measure the presence (or absence) of the 11 factors the literature argues are associated with sustainability (see above). First, a scale of teacher responses about the social norms of their school was created to measure the level of teacher community in the school, which is one dimension of local capacity or school social capital. Second, we explored several district-level measures of district support (see Aladjem, Kurki, Taylor, Uekawa, & Zhang, 2004) but, with few districts and little between-district variation, opted to use a school-level variable representing the school's perception of district support. Thus, as a proxy for district support, we use the school's report of whether the district provided a range of supports for the professional development of teachers during the CSR implementation process. We also have measures of whether the school's CSR grant ended in 2002–2003 or 2003–2004, whether the school made gains in reading and mathematics achievement while using the CSR in 2001–2002, whether the school had a new principal between 2002 and 2004, whether teacher turnover was a serious problem in the district and school, the proportion of teachers who reported initially supporting the adoption of the CSR model, and whether the model adoption was mandated. In an attempt to account for whether the reform has been structured into school life, we include the school's level of implementation of its model in 2002. We also measure the degree to which professional development activities were designed to support the CSR model and the extent to which teachers reported that the information provided by their CSR model developer was useful (i.e., the developer understood their school, established a good rapport, and fulfilled their expectations). The 11th sustainability factor, the absence of competing reform programs, is measured by teachers' degree of agreement with a statement describing its inverse—that the presence of so many different initiatives makes it difficult to keep track of them all. A limitation to our measurement is that we lack a strong measure of the fit between a school and its CSR program. In its place, we have entered a measure of the degree to which teachers reported that they had been able to apply their professional development experiences during the CSR effort to their classroom instruction, aggregated to the school level. Where appropriate, survey responses in 2002, 2003, and 2004 were combined to provide an average over the relevant time period for these analyses.

In order to examine whether it is more important that several of these factors exist rather than that any one exists independent of the others, we treated the absence or low level of each of the 11 factors as a risk factor for unsustainable reform. We calculated whether a risk factor was present, for instance, if there was a lack of leadership stability because a new principal joined the school in 2002–2003 or 2003–2004, 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. Although the resulting index of risk factors is a rough estimate of the number of coincident risk factors, it generates a fairly normal distribution of 0–9 coincident risk factors and fairly represents the idea, cited by the literature as important, that multiple factors for sustainable reform were absent in a particular school.

A series of additional covariates are included at the school level in order to control for other factors that may be related to the school's likelihood of dropping, or level of and change in, implementation, such as the school's particular CSR model, the number of years since the school's adoption of its CSR model, whether the school includes middle grades, whether the school was identified for improvement under No Child Left Behind during 2002–2003 or 2003–2004, and the school's enrollment and level of disadvantage (i.e., free/reduced lunch and minority percentages).



## Results (Analysis I—A Sustained Reform Relationship)

In Analysis I we fit two multilevel (schools within districts) Bernoulli logistic regression models to data on 250 schools that were affiliated with a CSR model in 2001–2002, 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 as 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 and CSR program, chronological stage of implementation, and estimate the associations between the 11 sustainability factors and schools' likelihood of dropping CSR. 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.

The first column of Table 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, CSR Model A schools were more likely to disengage from that program than schools working with “other” CSR programs (the omitted category) or CSR Model F. 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.





**Table 3. Results From Two-Level Bernoulli Logistic Regression Estimating the Likelihood of Dropping Affiliation With CSR Model, 2002–2003 or 2003–2004**

	Independent factors model			Cumulative risk factors model		
	Coeff.>	SE		Coeff.	SE	
Intercept	-0.2735	0.6720		-1.3584	0.7969	
District						
Degree to which teacher turnover is problem	0.7345	0.2286	***	-	-	
School						
Has middle grades	-1.2875	0.4203	***	-1.2147	0.3973	***
School size	-0.0386	0.1756		-0.0805	0.1793	
Disadvantage index	0.0021	0.1615		0.0073	0.1551	
Identified for improvement	0.3407	0.3386		0.4535	0.3339	
CSR Model A	1.5012	0.6778	**	1.609	0.6029	***
CSR Model B	0.6610	0.7982		1.1804	0.7162	*
CSR Model C	0.0298	0.7003		0.2218	0.6401	
CSR Model F	-0.4424	0.5579		-0.3125	0.5108	
Middle-stage: 3–5 years since adoption	-0.3005	0.5038		-0.1734	0.5110	
Late-stage: 5 or more years since adoption	-0.1026	0.4088		0.0912	0.3974	
Risk factor index	-	-		0.1835	0.0883	**
Teacher community	-0.1294	0.2014		-	-	
Supportive prof devel. for CSR	-0.2943	0.1617	*	-	-	
CSR grant ended in 2002–2003 or 2003–2004	0.4763	0.4523		-	-	
Change in student reading and mathematics scores 2000–2001 to 2001–2002	0.1659	0.1625		-	-	
Applied prof devel. in classroom instruction	0.0189	0.1587		-	-	
Principal recently joined school	0.0803	0.3111		-	-	
Faculty tenure	0.1022	0.1587		-	-	
Mandated adoption of CSR	-0.0421	0.3252		-	-	
Implementation fidelity in 2002	-0.0295	0.1948		-	-	
Usefulness of developer’s assistance	-0.1956	0.1930		-	-	
Many competing reform programs	-0.0430	0.1677		-	-	

\*  $p < .10$ . \*\*  $p < .05$ . \*\*\*  $p < .01$ .



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 have been replaced by the risk factors index in an attempt to examine whether the key predictor of schools' dropping is the cumulative effect of multiple risk factors rather than the independent effects of each of the factors. The results in the second column of Table 3 show that for each additional risk factor, a school was more likely to drop its affiliation with its CSR model. Therefore schools with \_\_ risk factors are \_\_ more likely to drop than schools with \_\_ risk factors. Although this model does not indicate that there is an effect of the number of risk factors above and beyond the risk factors themselves (in fact there does not appear to be such an effect), it does suggest that these 11 risk factors operate in combination or cumulatively to dispose schools toward ending an affiliation with a CSR model.

## Results (Analysis II—Sustaining Implementation of a Reform)

Table 4 presents the results from Analysis II, where we fit a three-level hierarchical linear model to data from the same 250 schools. Teacher reports of implementation provide the data for the dependent variable, and the structure of the model creates a school-level slope on the dummy variable indicating the year in which the teacher reported, such that this slope estimate represents the school mean implementation in 2004 adjusted for the prior level of implementation in 2002. The teacher-level covariates at the bottom of the table control for changes in the composition of the school's faculty over the years and also reveal that reading/language arts/English teachers (compared to mathematics teachers) and teachers with longer tenure at the school exhibit higher levels of implementation.

The estimates located under the section "slope as outcome" address the question of what factors are associated with more or less gain in implementation relative to the initial measurement and also address specifically whether dropping a relationship with a CSR developer is associated with a decrease in implementation. This section of Table 4 shows 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, from the coefficient estimates on the intercept (that is, the school mean implementation level in 2002), one can see that 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%. There is a similar finding of greater gains, having, however, begun at a lower initial level for CSR Model B and the "other" category of CSR models relative to CSR Model F (which stays fairly stable over time along with CSR Model C). It must be noted that the lower initial level is likely due in part to actual differences in fidelity and in part due to differing difficulties of the specific program keys (which are not controlled for as in Kurki & Aladjem, 2005). 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). Finally, the key variables of interest are the risk factors index and the indicator variable for schools that dropped their CSR model affiliation. Schools with more risk factors began lower, but having a greater number of risk factors is not related to implementation gain. Schools that formally dropped their CSR model actually began with higher implementation levels than schools that later continued their relationship, but the schools that dropped did



also drop in terms of implementation level relative to those schools that continued their relationship with a CSR model developer. In sum, dropping a relationship with a CSR model does appear to be associated with a reduction in a school’s level of implementation fidelity, but the magnitude of the reduction is fairly modest at –5%.

**Table 4. Results From Three-Level Slope as Outcome Regression for Difference in Implementation From 2002 to 2004**

	Implementation		
Intercept	0.7133	0.0344	
<u>District</u>			
Concentration of CSR schools in district	0.0067	0.0031	**
<u>Intercept: implementation in 2002</u>			
<u>School</u>			
Has middle grades	-0.0226	0.0211	
School size	-0.0082	0.0094	
Disadvantage index	-0.0350	0.0098	***
Identified for improvement	-0.0366	0.0197	*
CSR Model A	-0.0565	0.0357	
CSR Model B	-0.3087	0.0462	***
CSR Model C	0.0092	0.0407	
Other CSR model (CSR Model F is omitted category)	-0.5000	0.0239	***
Middle-stage: 3–5 years since adoption	0.0863	0.0296	***
Late-stage: 5 or more years since adoption	0.0655	0.0226	***
Risk factor index	-0.0093	0.0055	
School dropped affiliation with CSR model	0.0529	0.0211	**



**Table 4. Results From Three-Level Slope as Outcome Regression for Difference in Implementation From 2002 to 2004 (continued)**

	Implementation		
<u>Slope as outcome: difference in implementation in 2004 adjusting for starting level in 2002</u>			
<u>Slope</u>	0.0304	0.0274	
<u>School</u>			
Has middle grades	0.0068	0.0168	
School size	0.0053	0.0073	
Disadvantage index	0.0263	0.0078	***
Identified for improvement	0.0267	0.0157	*
CSR Model A	0.0307	0.0280	
CSR Model B	0.3057	0.0363	***
CSR Model C	-0.0064	0.0320	
Other CSR Model (CSR Model F is omitted category)	0.4113	0.0196	***
Middle-stage: 3–5 years since adoption	-0.0656	0.0234	***
Late-stage: 5 or more years since adoption	-0.0530	0.0182	***
Risk factor index	0.0049	0.0043	
School dropped affiliation with CSR model	-0.0486	0.0168	***
<u>Teacher</u>			
Years of tenure at this school	0.0050	0.0013	***
Mathematics teacher	-0.0163	0.0024	***
Teaches grade 3 and/or 4	-0.0029	0.0030	
Teaches grade 7 and/or 8	-0.0041	0.0044	
Teaches a mix of grades	-0.0025	0.0043	

\*  $p < .10$ . \*\*  $p < .05$ . \*\*\*  $p < .01$ .



## Discussion (Analyses I and II)

One of the greatest challenges, if not the greatest challenge, to CSR is sustaining reform over a time period long enough to produce substantial effects. By examining how CSRs complete their life course, this paper 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 Analysis I 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 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 that teachers' human resources of knowledge, skills, and commitment and 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. 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. Just such an analysis, Analysis II, 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, it is clear that many schools that formally drop their affiliation with a reform developer must still be sustaining many of the practices prescribed by the CSR model developers. These analyses do not tell us which of these schools are ones that 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, but they do make it clear that, on average, the effects of CSR models can persist beyond the formal discontinuation of the reform relationship.



## Limitations

These primarily quantitative analyses reveal general relationships, but they cannot fully account for the many contingencies that may play important roles in sustainability for specific schools. For example, in our analyses of the factors related to sustaining a reform effort, we could not examine whether the effect of district support depends on the nature of each school's strategy for dealing with the changes, as well as all of their own local conditions, prior history with reform, and internal capacity (Datnow, 2001). We recommend continued qualitative, cross-case analyses to better understand the interactions among the risk factors analyzed here as well as other various historical, political, and qualitative factors and how they relate to sustainability of CSR.

The present analyses do not address the ultimate question on sustainability: Can a reform produce sustained effects or sustained improvement in outcomes? We address whether implementation is associated with achievement outcomes but there is much more to be explored regarding the patterns of achievement gains that CSR programs produce over time. Panelists grappled with this issue in a session at the National Clearinghouse on Comprehensive School Reform (NCCSR) 2004 meeting of researchers in Chicago. The consensus of the panel was that often after an initial dip in outcomes, CSR schools can make substantial gains in outcomes as they mature through the third through fifth years after adoption, but considerable doubt remains about whether some CSR programs can sustain their gains beyond this period, and questions remain as to why the gains appear to be so difficult to sustain.

## Policy Implications and Conclusions

**Nearly one third of CSR schools in our analyses dropped their relationships with their CSR developer or affiliation with the reform. Further, 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 relationship appear to have sustained their implementation of many of the practices of their programs.** Although we do 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 also do 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 at least implicitly design 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 but have gradually shown that school leaders and teachers need to better understand the underlying tenets of the reform and need some degree of flexibility to adapt their implementation to local circumstances in order to sustain their reform and deepen its implementation. Here reform developers need to decide where they can compromise on certain specific practices in order to sustain the larger effort but also must figure out where practices are non-negotiable because they are critical to their core, research-based instructional core principles and practices. Perhaps most importantly, model developers' fairly common practice of gradually pulling back from schools and reducing their professional development and technical assistance activities so that schools can become self-sustaining (and often to turn their attention to other sites) needs to be re-examined. Coburn (2003) argues that CSR model developers need to rethink scale, and we agree,



based on our findings, that many of the CSR schools face six or more of these sustainability risk factors and that sustained professional development and developer technical assistance are one of the key risk factors; dropping a reform relationship 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 disconfirm 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 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 followed by summative evaluation after reform has had time to have impact to determine if it is wise to further sustain implementation. Further, districts need to pay special attention to CSR implementation in schools that experience multiple risk factors for unsustainable reform relationships, as well as 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, need to invest in faculty retention, induction of new staff, efforts to sustain professional development, and need build the human and social capital that provides local capacity to sustain a reform effort. Further, 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. However, it is clear 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 previously 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). Methodologically, evaluators need to consider how to treat those schools that end their participation in a treatment, how to track those schools, and whether a treatment gets the credit/debit for those schools' gains/losses. Second, more research is needed to understand the dynamics of sustainable reform, especially on the interaction among multiple sustainability factors. Third, as is often the case, researchers need to extend their time frame. CSR models, and many reform programs, take place over 5 or more years and claim to begin



producing academic gains often only after the third or even fifth year. Lastly, 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 if there is a point in time at which schools *should* switch to a new reform in order to sustain academic gains and continual improvement.





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