NAS’s mission is to help schools and districts significantly raise the achievement of large numbers of students with design-based assistance (New American Schools Development Corporation, 1999). In fact, improving student and school performance is a critical goal of all comprehensive school reforms.

**CORE ELEMENTS OF DESIGNS**

To accomplish the goal of improving performance, each design team has a “theory of action” that establishes a link between elements of the design and student performance. The NAS designs range from relatively specific descriptions of how schools should be organized and what materials and professional development should be relied on to less-specific visions and processes for school restructuring.

One of the more specific NAS designs is RW, which builds on years of research and implementation experiences with the reading and writing program *Success for All*. RW provides an abundance of print materials, assessments, professional development, and specified organizational changes (e.g., homogeneous instructional groups that are reorganized frequently to address students’ needs). The design begins implementation with a specific focus on changing curriculum and instruction.

In contrast, some of the other NAS designs are more process oriented. For instance, EL is less structured than RW and is based on design principles that reflect the design’s origins in the Outward
Bound program. Students’ experiences in EL schools consist primarily of engaging in multidisciplinary, project-based learning expeditions that include intellectual, service, and physical dimensions. Teachers play a critical role in developing the expeditions, which involves a great deal of effort and imagination.

Thus, it is important to remember the unique attributes of each design in terms of the components of schooling emphasized, the different strategies for implementation, and the complexity and specificity of the design. Certainly we cannot capture all of the uniqueness of each design in the current report, but RAND’s other studies of NAS have pointed to these characteristics and the importance of looking at changes in the designs over time (see Bodilly, 2001; Berends, 1999; Glennan, 1998).

While each design is unique, they all tend to emphasize five core components:

- organization and governance;
- professional life of teachers;
- content and performance expectations;
- curriculum and instructional strategies; and
- parent and community involvement.

Appendix A describes each of these components in more detail. Teacher-reported indicators of these core elements are used to create a core implementation index, the dependent variable in our analyses.

FACTORS AFFECTING IMPLEMENTATION

The process of school change to improve student achievement is complex and difficult. It requires the coordination of a variety of actors and factors to make it work. As Datnow and Stringfield (2000: 199) write:

[Re]form adoption, implementation, and sustainability, and school change more generally, are not processes that result from individuals or institutions acting in isolation from one another. Rather, they
are the result of the interrelations between and across groups in different contexts, at various points in time. In this way, forces at the state and district levels, at the design team level, and at the school and classroom levels shape the way in which reforms fail or succeed.

Based on an extensive literature review, Fullan (2001) groups the factors affecting implementation into three main categories:

(a) **Characteristics of the change itself**, in terms of need and relevance of the change, clarity, complexity, and quality and practicality of the program;

(b) **Local factors**, that capture “the social conditions of change; the organization or setting in which people work; and the planned and unplanned events and activities that influence whether or not given change attempts will be productive.” (Fullan, 2001: 80). These include characteristics of teachers, principals, communities, and districts; and

(c) **Factors external to the local system**, such as role of government agencies, other outsiders, and external assistance.

We draw and expand on these factors to highlight the role of each when assessing NAS’s whole-school reform initiative, although we group them in slightly different ways. The framework portrayed in Figure 2.1 is an attempt to capture the complex “system of variables” (Fullan, 2001: 71) that is at the heart of educational change.

**Teacher Background**

Without willing and able teachers who embrace reform and provide the necessary leadership, no reform can be enacted, no matter how effective it may be. Teachers are the “street-level bureaucrats” at the core of educational change (Weatherly and Lipsky, 1977) and as Fullan succinctly stated, educational change depends on “what teachers do and think—it’s as simple and as complex as that” (Fullan, 1991, p. 117).
Educators must respond to multiple, simultaneous pressures and demands. For many teachers, policy goals and activities are simply part of a broader environment that presses in upon their classrooms. Their ability to cope with these demands, and their commitment to change are crucial to coherent and sustained implementation. For as Tyack and Cuban (1995) state, teachers often implement new reform programs with “pedagogical pasts” (see also Hargreaves, 1994; McLaughlin et al., 1990; Muncey and McQuillan, 1996).

Moreover, engagement in reforms may be affected by teachers’ personal characteristics, such as their age and experience (Huberman, 1989), gender (Datnow, 1998, 2000a), and race (Foster, 1993; Bascia,
2000), but not necessarily correlated (Berends, 2000; Datnow and Castellano, 2000), so it remains important to examine these characteristics for the specific reforms under consideration.

Thus, teachers matter: their experience, subject-based expertise, attitudes, and orientations, (and characteristics that may affect those attitudes such as age, gender, race/ethnicity) are important in determining the degree and level of implementation.

Fullan’s theory of educational change highlights the importance of working relationships among teachers in implementation of change: collegiality, open communication, trust, support, learning on the job, and morale are closely interrelated (Fullan, 2001; Rosenholtz, 1989). Newmann and colleagues show a strong link between professional learning community, teacher learning, and student performance (Newmann and Wehlage, 1995).

In short, teachers are central to any organizational changes that might alter student-teacher interactions occurring in classrooms to improve student learning (Gamoran et al., 1995; Oakes et al., 1992). Over time, teachers carry with them a great deal of knowledge based on their educational attainment, teaching experience, and other personal characteristics that together are likely to be related to their engagement in schoolwide restructuring activities (Louis and Marks, 1998). Thus, it is important to examine the relationships among various teacher background characteristics, design implementation, and reported effects of schoolwide designs on teachers and students.

School Characteristics

Clearly, schools matter: their leadership, environment, and climate.

Research has consistently shown that the principal strongly influences the likelihood of change (Fullan, 1991, 2001; Berends, Kirby, et al., 2001; McLaughlin and Talbert, 2001; Newmann et al., 2000; Day et al., 2000; Bryk et al., 1998a; Berman and McLaughlin, 1978). As Fullan writes:

I know of no improving school that doesn’t have a principal who is good at leading improvement. (2001: 141.)
However, there is general consensus that direct principal influence is by itself not a powerful influence on change; rather principals “facilitate” the process of change. For example, leadership of the principal may translate into the ability to obtain sufficient resources for the school and support teachers in their efforts to implement change. Elmore, for example, writes:

[T]he job of administrative leaders is primarily about enhancing the skills and knowledge of people in the organization, creating a common culture of expectations around the use of those skills and knowledge, holding the various pieces of the organization together in a productive relationship with each other, and holding individuals accountable for their contributions to the collective result. (2000: 15.)

Characteristics of schools are also likely to influence the adoption of schoolwide designs and their effects on student learning. In our work, we are examining whether schools’ “structural” characteristics such as the minority and socioeconomic composition of the school, school size, and school level (elementary, middle, high school) are related to implementation and performance (Berends, 1999).

Schools that face challenges in terms of poverty may encounter difficulties with restructuring efforts such as whole-school designs because high-poverty schools may lack the necessary resources to provide a quality education (Lippman et al., 1996) because students may have lower levels of engagement, effort, and aspirations (Hoffer, 1992; Ralph, 1990; Fordham and Ogbu, 1987), and because teachers may not have the necessary supports they need to foster collaborative relationships necessary for school improvement efforts (Hoffer, 1992; see also Berends, Kirby, et al., 2001; Berends and King, 1994).

Yet, because federal funding such as Title I is oriented toward disadvantaged students and schools, the effects of socioeconomic and minority composition are likely to be mediated by the effect of increased resources. In fact, since the 1994 reauthorization of Title I, schools with more than half of their students eligible for free or reduced price lunch may use Title I funds for schoolwide programs. Thus, there may be a positive relationship between high-poverty schools and schoolwide implementations such as NAS designs because of such funding sources.
Other school structural factors (size and level) may inhibit school-wide implementation of reforms. For example, larger secondary schools are more complex organizations and are likely to resist organizational change (Perrow, 1986). Moreover, larger schools may be characterized as more bureaucratic in organization rather than communitarian, resulting in a climate where teachers are less likely to collaborate around a common mission and vision as envisioned by whole-school designs (see Lee, Bryk, and Smith, 1993; Lee and Smith, 1995, 1997). For example, Newmann, Rutter, and Smith (1989) found that teachers were more likely to report a communal atmosphere (e.g., teachers as colleagues who share beliefs and values, teachers can count on other staff members to help, and cooperative efforts among staff) in smaller schools than larger ones (see also Bryk and Driscoll, 1988).

**District Factors**

Research also underscores the importance of the external environment, especially district support and stability of leadership, in the process of change (Bodilly and Berends, 1999; Bodilly, 1998; Glennan, 1998; Fullan, 1991). The district can facilitate and foster change by providing resources for the school and for professional staff development, and showing active support for schools implementing designs.

Datnow and Stringfield, in their comprehensive, longitudinal study of 300 schools implementing a variety of reforms for at-risk students report:

> We found that clear, strong district support positively impacted reform implementation, and that lack thereof often negatively impacted implementation... schools that sustained reforms had district and state allies that protected reform efforts during periods of transition or crisis and secured resources (money, time, staff, and space) essential to reforms. (2000: 194–195.)

In RAND’s work on NAS, Bodilly (1998) found that districts played a strong role in determining the initial and sustained viability of the relationship between the school and the design team. Early on in the scale-up phase, many schools’ staff members had complaints about the district’s poor planning and providing too little time for making
decisions, issues brought up in other assessments of the adoption of schoolwide programs (Wong and Meyer, 1998).

RAND’s prior case studies (see Bodilly, 1998; Bodilly and Berends, 1999) revealed that higher average levels of implementation were found in districts that had a stable district leadership that placed a high priority on the effort, that lacked a major budget crisis or other crisis, and that had a history of trust between the central office and the schools. School-level respondents directly linked these factors to greater efforts at implementation. When these factors were missing, school respondents reported that their own efforts stalled or were less intense.

Moreover, crucial central office political support and attention can be buttressed by significant changes in regulatory and financial practices. Schools attempting comprehensive school reform to address their particular problems can be supported through increased site-level control over their curriculum and instruction, their budgets, their positions and staffing, and most essentially their mission. Comprehensive school reform is not confined to the adoption of a new mandated curriculum or a few new instructional strategies. Instead, it requires rethinking and adoption at the school-level of new curriculum and instructional approaches and the accompanying professional development. District flexibility in allowing schools to pursue this rethinking is a critical aspect for design-based schools. Development and implementation of such curriculum and instructional strategies at the school level may be significantly hampered without district support through resource allocation for instructional positions, materials, technology, professional development, etc.

Many schools are on innovation overload; they are suffering the burden “of having a torrent of unwanted, uncoordinated policies and innovations raining down on them from hierarchical bureaucracies” (Fullan, 2001: 22). In a recent survey of schools in districts in California and Texas, Hatch (2000) reported that two-thirds of the schools were working with three or more improvement programs; over one-fifth were working with six or more; and in one district, close to one-fifth of the schools were working with nine or more programs simultaneously. Districts can make a world of difference in protecting schools from such overload and fragmentation.
In short, district-level politics, policies, and practices may promote or derail schoolwide reform efforts such as the NAS designs.

**External Assistance by Design Teams**

How schools go about selecting a design has implications for the implementation that follows (Bodilly, 1998; Datnow, 2000b; Desimone, 2000; Consortium for Policy Research in Education, 1998; Smith et al., 1998; Stringfield, 1998; Ross et al., 1997). For example, if a school is forced to adopt a design, it is not surprising that teachers would resist engaging in the activities of the design. Yet, some schools are often targets for forced restructuring efforts, particularly those that exhibit chronic poor performance. Thus, a critical aim of the NAS designs before implementation even begins is to obtain the buy-in of teachers for the planned restructuring activities. Most of the designs require between 75 and 80 percent of the teachers voting in favor of the designs. The rationale is that if the vast majority of the staff vote to adopt the design, they will commit to making the changes necessary during the implementation process. However, Datnow and Stringfield (2000), in their review of innovative programs found that even when there is the requirement of teacher “buy-in,” agreement can be superficial:

> In several of our studies we found that educators adopted reform models without thinking through how the model would suit their school’s goals, culture, teachers or students . . . even when opportunities to gather information were available, educators seldom made well-informed choices about reform designs. . . . (2000: 191; see also Hatch, 2000.)

Therefore, we measure extent of teacher support for the design, in addition to whether teachers voted to adopt the model.

Clear communication by designs to schools is critical for not only the selection of the design, but implementation of it—something that external assistance providers have found challenging when attempting to help a large number of schools (Bodilly, 1998). This goes back to Fullan’s earlier point about clarity of the change as a factor affecting implementation; the more complex the reform, the greater the need for clarity. At the same time, Fullan (2001) warns against what he refers to as “false clarity” in which teachers interpret the change in
an oversimplified way. For example, Stigler and Hiebert (1999) in their video analysis of Grade 8 mathematics lessons showed that teachers introducing reforms in a superficial manner actually made matters worse.

Communication to schools both in the selection and implementation process can take several different forms, including design fairs, print materials, use of computer software and the Internet, workshops, retreats, school visits, and site-based facilitators. For instance, school visits by design team staff on a regular basis to help teachers address issues related to developing curriculum units or the use of rubrics to assess students are intended to help teachers implement project-based learning and the assessment of that learning within the context of the design. Other types of communication might be effective as well, and the clearer and more consistent the information provided about implementation by designs to schools, the smoother the implementation process is likely to be.

Another characteristic of the change that is important in implementation is the quality and practicality of the program. Large-scale change requires attention to high-quality teaching and training materials. In addition, for implementation of any program, resources to support implementation and professional development are critical (Keltner, 1998; McLaughlin, 1990). It is a common finding that when resources decrease or disappear, the implementation is likely to diminish (Glennan, 1998; Montjoy and O’Toole, 1979). If teachers receive the needed funds, professional development from design teams for design implementation, materials to support implementation, and time to plan and develop the program, it is likely that implementation will deepen over time.

Other Factors

Those who have studied implementation of educational programs have pointed to other factors that affect implementation such as the federal and/or state policy environment, the larger community context including parent support for school change, and student background and prior achievement (e.g., Elmore and Rothman, 1999; Berends, Grissmer, Kirby, and Williamson, 1999; Grissmer and Flanagan, 1998; Fullan, 1991, 2001).
The federal and state policy context is likely to play an important role in implementing schoolwide reform (see Fullan, 1991, 2001; Koretz and Barron, 1998).

If we are to achieve large-scale reform, governments are essential. They have the potential to be a major force for transformation. The historical evidence to date, however, suggests that few governments have gotten this right. (Fullan, 2001: 220.)

Governments have followed three separate strands of activities: pushing accountability, providing incentives (pressure and support), and fostering capacity-building. Most governments have placed great emphasis on the first; some have successfully combined the first two, but few, until recently, have paid attention to capacity-building (Fullan, 2001). Darling-Hammond (2000) in her review of state policies concluded that the states that invested in capacity-building (in terms of investments in teacher knowledge, training, and skills) have been more successful in raising student achievement. The Education Commission of the States (1999) in drawing together lessons learned from implementing whole-school reform pointed out that support from the state education department is key for long-term success.

The recent CSRD program is another federal effort at fostering capacity-building. The program directly supports design-based reforms such as NAS by providing at least $50,000 to schools to pay for the related services. Some states and districts with high-stakes accountability systems are strongly encouraging or forcing low-performing schools to adopt designs (see Kirby, Berends, Naftel, and Sloan, in review) as a means of improvement. They may also facilitate a more effective matching process for schools to select designs based on their local needs by helping schools with needs assessments, providing additional information, and negotiations with model developers (see Bodilly and Berends, 1999; Bodilly, 1998; Smith et al., 1996).

An important limitation of most government initiatives is that governments emphasize “adoption,” not implementation. Elmore (2000) points out that many government policies “are quintessential structural changes in that they imply absolutely nothing about either the content or quality of instruction” (2000: 10). It is important for
governments to realize the long timeline needed for implementation and to stay in for the long haul by being willing to invest in the long-term.

The support of the larger community and parents is likely to affect implementation as well (Fullan, 1991). Parent and community demand for reform, their readiness for it, and their ongoing support of it have important ramifications for implementation. One of the main obstacles to implementing a variety of restructuring efforts vis-à-vis the educational bureaucracy may be that many community members do not see the need for change (Berends and King, 1994; see also Jennings, 1996, 1998).

An additional set of factors that affect implementation of school restructuring efforts and their effects is student background and prior achievement (Berends et al., 1999; Koretz, 1996; Meyer, 1996). While policymakers focus on the “lever” at the school level to manipulate to improve learning opportunities and performance, several studies have shown the importance of student background in the learning process (see Coleman et al., 1966; Jencks et al., 1972; Gamoran, 1987, 1992; Bryk, Lee, and Holland, 1993).

While we understand the importance of these “other” factors, the analyses that follow are of more direct measures of the factors in the boxes in Figure 2.1 with solid lines between them.

This chapter has described the theoretical framework that underpins the analyses of implementation reported here. We now turn to a description of the longitudinal sample of NAS schools that forms the database for our study.