Creating Cultures for Learning: Supportive Relationships in New and Redesigned High Schools

Evaluation of the Bill & Melinda Gates Foundation's High School Grants

Creating Cultures for Learning: Supportive Relationships in New and Redesigned High Schools

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Executive Summary

The Bill & Melinda Gates Foundation's national high school initiative seeks to catalyze the creation of a new kind of American high school—one where all students feel well known and supported by teaching staff, where every student has a challenging academic program, and where the community of teachers is collaborative and focused on obtaining good outcomes for students. An evaluation team of researchers from the American Institutes for Research (AIR) and SRI International has been studying the schools being created or redesigned through this initiative since 2001. This report focuses on the schools' progress in putting in place the organizational structures and climate that the foundation believes will be conducive to better retention and academic preparation of historically underserved youth.

As the foundation embarked on its national education initiative, members of its staff visited high schools across the country looking for examples of schools that were succeeding with low-income, African-American, and Latino students. After finding a handful of innovative and successful schools, the foundation identified a set of key features or attributes found in those schools. These features cover academic structures as well as aspects of the school climate.[1] The foundation's national high school initiative has sought to increase the supply of such schools by funding nonprofit organizations to start new high schools or to redesign existing comprehensive high schools into collections of smaller schools or learning communities. The foundation's effective-school attributes have provided an intellectual framework for these efforts.

This report uses data collected from schools in 2002, 2003, and 2004 to explore the extent to which the schools have put in place the effective-school features articulated by the foundation.[2] We have put particular emphasis on examining the nature and influence of relationships within the school—relationships between teachers and students, among students, and among the school staff.

Data Sources

Surveys have been administered to principals, teachers, and students in new schools, comprehensive schools preparing for redesign, and the small schools or learning communities resulting from redesign. Combining data from three years of survey administration, this report draws on survey data from the first year of operation of 24 new schools, the second year of 18 new schools, and the third year of 8 new schools. In

addition, it presents analyses of survey data from students and teachers in 26 small schools or learning communities created from the redesign of 7 comprehensive high schools.

Implementation of the effective-school attributes promoted by the foundation was assessed through a scale measuring each attribute on the basis of items from the surveys administered to students and teachers. In addition, six of the individual attribute values for each school were standardized and summed to provide a composite "implementation index," which can serve as a general measure of a school's creation of the kind of climate and supporting structures the foundation tries to promote.

In addition to conducting the surveys, the evaluation team has visited both new and redesigned schools over the past 3 years. Interviews, classroom observations, and student focus groups have provided insights into the process of establishing or changing the school culture.

Progress in New High Schools

New high schools started "from scratch" as part of this initiative generally open as charter schools with a single grade level (typically ninth grade). A new grade is added each year as a new class of students is accepted. The following are the major findings for new schools.

◆ ***Students and teachers at newly established schools reported a very positive school climate,*** characterized by close interpersonal relationships, common focus, and respect and responsibility. Data from surveys administered to students and teachers in 24 of these schools during the year in which they opened indicated that the schools had a much more positive climate—in terms of both personalization of the learning environment and a common focus among teachers and students—than was found in the comprehensive high schools we studied. Although we can not rule out the possible influence of the ability of these new schools to attract groups of motivated, like-minded students and staff, it is clear that they have established an environment marked by stronger relationships between students and teachers and by more staff collaboration and participation in decision-making than is typical of traditional high schools.

◆ ***As new schools move into their second year of operation, they tend to experience a decline of most of the effective-school attributes.*** The new schools typically began operation as very small entities, with a median size of just 103 students and 10 teachers in their first year. The "family atmosphere" that both students and adults describe in that year often gives way to "growing pains" as a new set of students and teachers is added. Both our composite index of implementation

of the attributes and scores for each of the individual attributes declined from year 1 to year 2 of the schools' operation. Even so, the school climate, as measured by the extent to which the effective-school attributes are present, remained far more positive than that reported by students and teachers in comprehensive high schools.

Interviews and observations at new schools revealed the stories behind the survey data. Both teachers and students described a change in social dynamics in their second year as schools doubled in size with the addition of a new class of students and the teachers to work with them. Although still generally very positive about their schools and their teachers, students in second-year schools felt less special than students did the first year. In terms of teacher community, some schools experienced a schism between those teachers who had been the "pioneers" in the school's first year and the newcomers who joined the staff later.

♦ *Although our data are limited, it appears that new schools typically make progress in their third year of operation.* Among the eight schools that opened in 2001–02 for which we have 2004 data, six made net progress over their first 3 years, as measured by the implementation index. We must be cautious in suggesting longer-term trends, however, because at this point we have three consecutive years of survey data for so few new schools.

♦ *External factors often exacerbated the challenge of preserving a positive school culture.* The maturing of newly established schools that were started under this initiative happened to coincide with the onset of a period of financial woe for American education. Severe cuts and deficits in education budgets in many states and districts had deleterious effects on schools in general and on still-developing innovative schools in particular. In some districts, layoffs hit new schools very hard because so few of their teachers had seniority within the system. Budget cuts and associated changes in staffing formulas forced many of the schools to increase their student-teacher ratios and class sizes.

♦ *The quality of leadership within the school emerged as an important factor.* New schools where the teachers characterized their principal as a strong leader had the foundation's effective-school attributes more firmly in place than did schools with weaker leadership. Interview reports often stressed the impact of a change in school leadership: in some cases, the replacement of a leader viewed as a poor match was associated with an improvement in the school's

climate (as measured by our implementation index). In at least one case, the departure of a leader characterized as strong was associated with a precipitous drop in the index.

♦ *After 3 years, teacher capacity issues persisted.* In the early years of these new schools, school staff often make analogies to start-up companies: they took the job knowing it would be very hard work to design a school, develop curriculum, participate in school leadership, and teach—all at the same time. Many expected pieces to fall in place and their workloads to ease by the school's second year. After 3 years, however, most teachers reported feeling just as overloaded as in the first year. Part of the burden can be attributed to academic programs that were still under development, particularly in schools that had yet to graduate their first class of seniors. However, there are increasing signs that unwieldy workloads may be endemic to the staffing structures of many small high schools. Some schools were centralizing school administration, adding resources through partnerships, or changing the balance of seminar and independent work to create a more manageable work life for their teachers.

Redesigning Comprehensive Schools into Small Learning Communities

In addition to funding the creation of new schools, the foundation has supported organizations working with existing comprehensive high schools to redesign them into a collection of smaller independent schools or learning communities serving the same students (and employing largely the same staff). Schools that are undergoing redesign need to tear down existing organizational structures in order to create new ones and often need to dispel a negative school climate and low expectations in order to create a nurturing and rigorous environment.

♦ *By the second year into the redesign process, the schools had indeed created smaller communities of students and teachers with an improved interpersonal climate.* Comparing the average implementation index scores of the small schools created through redesign with those of the comprehensive schools in the year before redesign, we found that the implementation of the school attributes improved. For 18 of the 26 small learning communities (SLCs) surveyed in 2004, the implementation index was significantly higher than that for the corresponding comprehensive schools in 2002. This change is particularly noteworthy because the people in the buildings—the student population and teaching staff—were primarily the same groups that had constituted the comprehensive schools.

♦ ***The biggest positive change reported by students and staff during interviews and focus groups at redesigned schools was an improvement in interpersonal relations.*** Students reported feeling better known and supported by staff after school redesign. Some students talked about their teachers as having higher expectations for them because of their increased knowledge of the students' capabilities. Teachers reported having closer relationships with their students and working more collaboratively with other teachers within their small learning communities. One negative note was sounded by some math and science teachers, who expressed a sense of loss caused by the breaking up or weakening of the comprehensive school's departmental structure when the SLCs were created.

♦ ***Despite gains in relationships, significant challenges persisted for redesigned schools.*** The challenges of transforming an existing school culture and organization, within the same building and with largely the same population of teachers and students, are very different from those faced by new school teams. Schools undergoing redesign were making incremental progress on issues that ranged from the logistics of scheduling to the paradigm shifts often required to instill cultures of high academic expectations for all students. At this early stage in the life of these reform efforts, it remains to be seen how long it will take to achieve implementation results that approach those of stand-alone new schools.

♦ ***There were differences in climate across small learning communities, even among those created from the same comprehensive school.*** In some cases, these differences may have been caused by differences in the SLCs' histories—some had been special or magnet programs before the redesign effort and had existing curricula and reputations, for example. In other cases, it seemed likely that the way in which the school had conducted the redesign and the nature of the SLC themes chosen tended to attract different kinds of students and teachers to different SLCs when the comprehensive school was subdivided. In cases where large differences in expectations and personalization of the different SLCs in the same building existed, there were concerns that the intended outcome of giving students a variety of SLC choices that were all high in quality was not being achieved. Some school redesigns appeared to result in a set of strong SLCs and one or more weak ones.

Implications for the Initiative[3]

♦ *There is mounting evidence that the new and redesigned high schools created through the foundation's initiative provide a more positive climate for both students and teachers.* The positive climate of the new schools, in comparison with the climate in comprehensive schools preparing for redesign, has been documented previously (AIR/SRI, 2004). Although it seems likely that the schools' size and design are major contributors to this result, alternative explanations are also plausible. Even though we have controlled statistically for the demographic characteristics of the students in different types of schools, it may well be that new schools tend to attract students from homes that place a higher emphasis on education or that they assemble a more motivated staff than is found in the comprehensive schools. Alternative explanations for the improvement in the climate at the new schools created through redesign are much harder to generate. In a redesigned school, the same teaching staff generally is serving the same student population that attended the comprehensive high school 2 years earlier. The increased expectations for all students, greater personalization, and atmosphere based on respect and responsibility reported by students and teachers after redesign suggest that the initiative is indeed having a positive influence on school climate.

♦ *Despite the many challenges involved in school redesign, the foundation should continue to support these efforts.* The positive effects reported here for school climate are based on a relatively small number of redesign efforts, and the foundation will want to see positive effects for student outcomes, such as achievement scores and graduation, as well. As the foundation awaits the accumulation of more evidence on these issues, the positive changes in relationships within schools that have undergone redesign justify some cautious optimism despite the difficulties and setbacks associated with such efforts (AIR/SRI, 2004; Fouts & Associates, 2005).

♦ *School redesigns are probably best done all at once rather than in stages.* The data reported here on school redesign are consistent with those reported by Fouts & Associates (2005) for a larger sample of school redesign efforts in Washington state. Whereas leaders of new schools make a strong case for opening a school with just one or two grades to make the school-opening process more manageable, the downsides of a gradual school redesign appear to outweigh the advantages. The difference is that schools undergoing redesign already have a full complement of grades and students; to continue serving the students not assigned to their first small

learning community, they need to operate two systems and cultures simultaneously. In addition, equity of offerings across small learning communities is harder to achieve when they are rolled out incrementally.

♦ *Schools should develop multiple partnerships early in their design process as an important supplement to internal capacity.* To carry out the vision of this initiative, schools and teachers are going far beyond the traditional notion of an academic education to help students, in the words of one teacher, not just get through their classes but "get through their life." Successful schools are recognizing that close partnerships with outside organizations can be an essential enabler in realizing this goal. Although the intermediary organizations funded through this initiative offer many supports (AIR/SRI, 2004), few offer the full range of services needed to carry out all school functions. Some schools are benefiting from additional partnerships that are targeted to a particular curricular need, like a biotech company that sponsors equipment for a specialized course that meets the school's theme. Other partners are deeply integrated into the school design, such as partnerships with teaching colleges or with counselors who provide personal social services to students. Schools that negotiated multiple and substantial partnerships early in their development are finding significant relief from at least some of the capacity issues that are so frequently experienced by teachers in new schools with small teaching staffs.

♦ *The foundation and its grantees should stress recruiting, developing, and retaining strong school leaders.* School leadership makes a big difference in reform efforts, and attention to the selection and development of school leaders can have large payoffs. Leadership of innovative schools demands a skill set different from that needed for more traditional administrative roles. In addition, the leadership turnover experienced in these schools' early years suggests that finding and training effective leaders for innovative schools can be a recurring task. The foundation may want to support further professional development activities for its school leaders and engage effective school leaders in providing support for a network of their colleagues.

♦ *The foundation should consider providing special supports for mathematics and science teachers.* In both new and redesigned schools, mathematics and science teachers are finding a fit with collaborative professional cultures more difficult. The subject matter standards for their disciplines and, in the case of science, the special equipment requirements make it more difficult for them than for other teachers

to collaborate with teachers of other subjects on thematic projects. They are also more likely than other teachers to report missing interactions with other teachers in their same subject area. Overall, in schools funded by this initiative, 3 years of experience has generated more successful models of cross-subject collaboration in the humanities than in mathematics and science. In fact, many examples of fruitful curriculum and instruction combining mathematics and science (and even mathematics and social studies) exist, many funded by the National Science Foundation. Either the foundation or its grantees may want to consider providing technical assistance and professional development specifically for math and science teachers working in new innovative high schools.

♦ *The foundation and its grantees should continue active support of the initiative's schools in the face of district and state actions that undercut fundamental components of their designs.* Both new and redesigned schools must be considered fragile entities well beyond their first 3 years of existence. Changes in funding formulas that force drastic increases in class size or that require schools to lay off a large portion of their teaching staff and to replace them with teachers who do not share the school's vision can easily destroy the special quality of these schools. The foundation and its grantees may want to focus more of their energy and resources on protecting the schools that have already been started, even if it means starting fewer new schools.

♦ *Grant decisions made under this initiative should consider plans for school sustainability.* Most schools in this program receive direct funding and support for their first 3 years. Although both new and redesigned schools typically make progress in that time, the extremely complex processes of institution building and school transformation take more than 3 years to complete, as demonstrated by the still-evolving status of schools whose foundation funding has ended. There is every indication that the need for funding and support for change is ongoing. Strategies for continued support for reform—potentially by providing funds for involving more mature schools in mentoring and supporting staff for new schools— should be explored. In addition, as the foundation moves toward focusing its education investments in specific districts or states, it can catalyze local partnerships that will support reforming schools over the longer term.

The foundation's vision for the high schools created through its initiative is that they are inviting places where students and adults know each other well and pursue a common mission supported by a culture of high

expectations. The atmosphere of mutual respect and personal responsibility should be pervasive, with faculty feeling collective responsibility for their students' success and being actively engaged as professional learning communities. We have found evidence that not only the new schools but also the small schools created through redesign are making progress toward this vision. Companion reports will deal with the other key components of the foundation's vision: schools' progress in promoting rigorous teaching and learning within classrooms and their students' early outcomes.

Introduction

The Bill & Melinda Gates Foundation's national high school initiative is based on the premise that America's high schools are neither designed nor equipped to meet the needs of today's youth. While some secondary students are doing college-preparatory or even college-level work, others languish in remedial courses. Many students have difficulty seeing the relevance of what they are taught in high school to either their present or their future lives. The impersonal environment of comprehensive high schools provides fertile ground for social cliques, bullying, and disaffection. Teachers who see 150 or more students a day have trouble remembering their students' names, let alone their individual learning needs.

Across the country, many high school students "fall through the cracks," just putting in time or dropping out. Little more than half of the African-American and Latino youth who start ninth grade finish high school with a diploma (Swanson, 2004). Fewer than a quarter of these students are ready to enter higher education without doing remedial work (Greene & Forster, 2003). The vision prompting the last major reshaping of U.S. secondary schools—that of a large, efficient high school that would promote equity by bringing together all kinds of students and offering a comprehensive set of courses—clearly is not working for many students, especially African-American and Latino students from high-poverty urban communities.

The foundation believes that to better serve these students, high schools need to become places that combine rigor in the academic program of every student (not just those in an honors or higher track) with relevance to their interests and potential career opportunities, supported by positive relationships that can inspire students both academically and personally. The foundation's national high school reform work began in 2000–01 with the award of grants to 12 nonprofit organizations charged with creating high schools that would embody these ideals. Some of the schools were to be created "from scratch" with a newly assembled school staff. Many of these schools are small, often with no more than 100 students per grade. Among these new schools, several are trying to replicate model schools that the foundation identified as succeeding with hard-to-serve youth. Most began operating with just a ninth grade, planning to add a new grade in each of the next three years. Other schools are being created through the redesign of an existing comprehensive high school into multiple small, independent schools or small learning communities (the distinction being that the latter have somewhat less autonomy and generally share a campus-level principal).

This report describes the creation and operations of new and redesigned schools supported by the Bill & Melinda Gates Foundation,

focusing particularly on the structure and nature of relationships within these schools. Previous evaluation reports (AIR/SRI, 2003b, 2004) have described the early experiences of the first set of schools opened or preparing for redesign under the foundation's initiative. By the third year of the initiative, more of the new schools have matured, and we can begin to look at a reasonable sample of new schools with 2 years of operating experience and a smaller number that have been open for 3 years. We also for the first time have survey data for schools that have undergone redesign. This information enables us to compare the characteristics of these schools during the year when they were planning the redesign (but still operated as a single large entity) with their experience 2 years later when they have been entirely or largely redesigned into smaller groupings of students and teachers.

School Cultures Founded on Strong Relationships

The Bill & Melinda Gates Foundation's call for high school reform was not unprecedented. Certainly, the educational standards movement has stressed the importance of rigorous academic content. The school-to-work initiatives of a few decades ago promoted a combination of college-preparatory content with instruction fostering new thinking and learning skills that would prepare students for 21st-century jobs (SCANS, 1991). In the thinking promoted by the foundation, these academic expectations are supported by an emphasis on creating public high schools characterized by strong positive relationships—between students and teachers, among students, and among the school staff.

A school with strong relationships is one where every student has at least one adult advocate and relationships between students and adults are sustained across multiple classes and years (Coalition of Essential Schools, 2000; Sebring et al., 1996). They are places where adults both model and expect interactions based on trust and personal responsibility. Teachers in these schools are part of a professional community taking joint responsibility for the school and working together to improve their practice (Marks, Secada, & Doane, 1996). The foundation believes that small school size is one factor that can enable authentic relationships of this nature: school size is a means to promote strong relationships, not an end in itself.

Although this report focuses on schools' efforts to build a supportive climate marked by strong relationships, those interpersonal ties are not the sole emphasis in the foundation's vision of high schools that serve all students well. During the first year of its national education initiative, the foundation described the features it wants to see in high schools in the form of seven attributes of high-performing schools. As described in the

sidebar, these attributes comprise *common focus, high expectations, person-alization, respect and responsibility, time to collaborate* (referred to in this report as *collaboration*)*, performance-based promotion,* and *technology as a tool.* Three of these attributes (personalization, respect and responsibility, and collaboration) deal directly with interpersonal relationships within the school. Two others (common focus and high expectations) deal with the nexus of academic rigor and relationships—the creation of a climate with common goals for student attainment and a strong belief that all students can reach those goals.

Because different students learn best in different ways, the foundation promotes many different school designs that all can offer a high-quality high school experience. Within a single jurisdiction, three types of schools may all be represented in order to meet the needs of all students: *traditional* schools, which focus on the rigorous preparation of every student

The Foundation's Attributes of High-Performing Schools

Attribute	Description
Common Focus	Staff and students are focused on a few important goals. The school has adopted a consistent research-based instructional approach based on shared beliefs about teaching and learning. The use of time, tools, materials, and professional development activities are aligned with instruction.
High Expectations	Staff members are dedicated to helping students achieve state and local standards; students are engaged in an ambitious and rigorous course of study; and students leave school prepared for success in work, further education and citizenship.
Personalized	The school is designed to promote sustained student relationships with adults where every student has an adult advocate and a personal plan for progress. Schools are small: no more than 600 students (less than 400 strongly recommended).
Respect and Responsibility	The environment is authoritative, safe, ethical, and studious. The staff teaches, models, and expects responsible behavior and relationships are based on mutual respect.
Time to Collaborate	Staff has time to collaborate and develop skills and plans to meet the needs of all students. Parents are recognized as partners in education. Partnerships are developed with businesses to create work-based opportunities and with institutions of higher education to improve teacher preparation and induction.
Performance Based	Students are promoted to the next instructional level only when they have achieved competency. Students receive additional time and assistance when needed to achieve this competency.
Technology as a Tool	Teachers design engaging and imaginative curriculum linked to learning standards, analyze results, and have easy access to best practices and learning opportunities. Schools publish their progress to parents and engage the community in dialog about continuous improvement.

Source: Bill & Melinda Gates Foundation (no date).

for work or college through a traditional range of high school subjects; *theme-based* schools, which engage students in a college-prep curriculum through coursework organized around a theme, such as the sciences, technology, or the arts; and *student-centered* schools, in which individual students create and follow their own tailored education plans (Bill & Melinda Gates Foundation, 2004). All these types of schools, however, have in common the goals of academic rigor, supportive relationships, and a design that meets the needs of every student they serve.

In short, foundation-supported schools are expected to be inviting places where students and adults know each other well and pursue a common mission based on high academic achievement for all students, and where the professional community is collaborative and student focused. This report focuses on schools' progress in creating this climate; upcoming reports will describe teaching and learning within classrooms and early outcomes for students.

Study Design

A team of researchers from the American Institutes for Research (AIR) and SRI International (SRI) have been conducting a national evaluation of the foundation's initiative since 2001. The goals and methods of this study are described in detail in AIR/SRI (2003a). The evaluation focuses on the national goals of the initiative rather than on the progress of individual schools and grantees. It is designed around three primary research questions:

◆ To what extent do the projects funded (wholly or partially) by the foundation initiative lead to secondary schools and classrooms with the desired attributes and to better, more equitable outcomes for students?
◆ What factors influence the success of the foundation-supported schools?
◆ To what extent have grantees developed mechanisms to scale up and sustain their efforts when foundation funding ends?

Within this overall evaluation scope, this report focuses on implementation progress in schools' first 3 years and on the factors that are central influences at this stage in the initiative.

This evaluation and its research questions are based on the foundation's theory of change (Weiss, 1995; Shadish, 1991): an overall model of the vision, goals, strategies, and assumptions of the initiative. The theory was articulated in a set of facilitated meetings with foundation officials in 2002 and is revised annually to keep pace with the strategic evolution of the initiative and lessons learned over time. Figure 1 depicts the basic elements of the theory, showing (1) program funding strategies;

Figure 1. The Foundation's Theory of Change
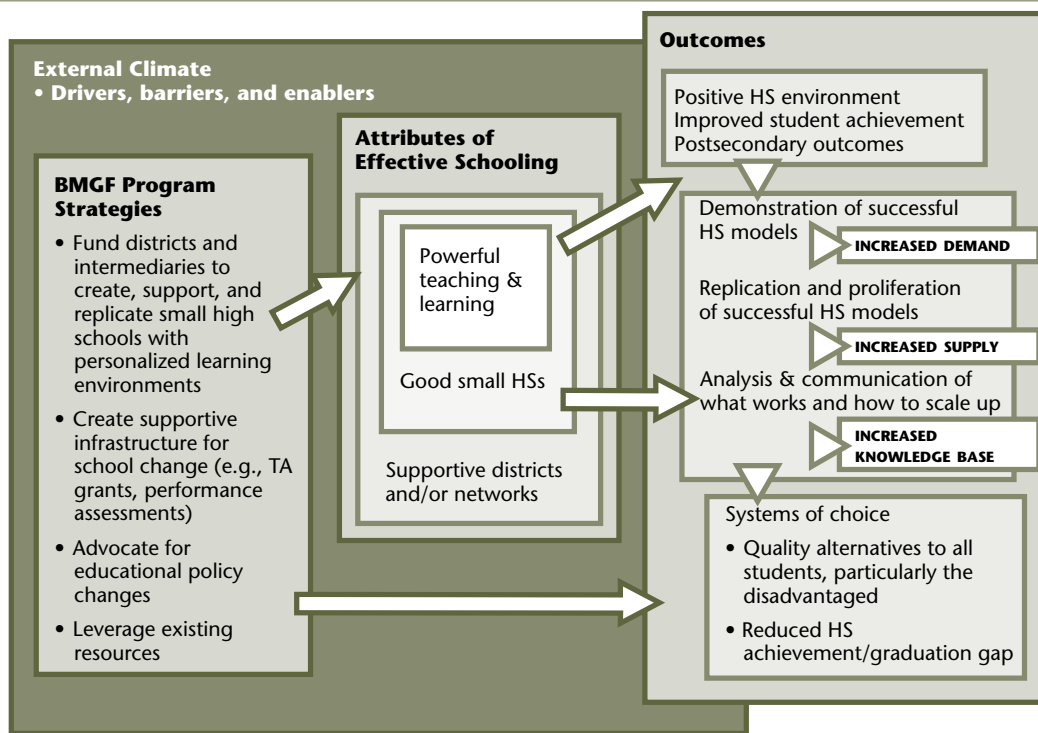
(2) schools and systems with particular attributes that the foundation seeks to promote through those strategies; and (3) intended results, including both outcomes for students in funded schools and the proliferation of high-quality systems of choice throughout the nation. The theory of change is described more completely in Shear and Smerdon (2003).

The data supporting this report are drawn from student, teacher, and principal surveys, combined with qualitative data collected from school site visits involving classroom observations, interviews with principals and teachers, and focus groups with students and parents. Surveys were administered to a sample of 26 schools in 2002, 24 schools in 2003, and 65 schools in 2004.[1] A subset of these schools, including some redesigned schools in the year when they first began operating as multiple smaller schools, were visited by the research team.

School types and the frequency of data collection at each are shown in the sidebar. New schools are surveyed and visited for each of their first 3 years, allowing us to track progress over time within individual schools. Similarly, comprehensive schools undergoing redesign are surveyed once in their planning year and again 2 years later, allowing a pre-post comparison. Survey data are also collected for model schools (more established

School Types Included in This Study

The sample of schools in this study includes schools that receive funding and support through a wide range of foundation grantees, selected to represent a diverse set of school models and schooling contexts throughout the country. Sample sizes for each analysis are noted throughout the report.

Model schools:	Schools that were operational prior to foundation funding, demonstrating the school vision imagined by the sponsoring grantee organization.
Data:	Surveyed and site visited once in 2001–02.
New schools:	New autonomous high schools that received foundation funding through a grantee organization, usually for their first 3 years.
Data:	Surveyed and site visited in each of the schools' first 3 years. Rolling sample of schools (i.e., new schools are added each year, and each stays in the sample for 3 years), beginning with those that opened in 2001–02.
Redesigned schools:	Comprehensive high schools receiving foundation funding to support their breakup into smaller learning communities; funds typically received for one planning year and two years of subsequent redesign activity.
Data:	Site visited in each of the three funded years; surveyed in planning year and again 2 years later (in the second year of redesign). Rolling sample of schools, beginning with those that began to receive foundation funding in 2001–02 (typically their planning year).
Comparison schools:	High schools that students in new schools would be likely to have gone to if the new schools had not been an option; paired with new schools that opened in 2001–02.
Data:	Surveyed in 2003–04.

schools that provide a benchmark for the desired state of new schools) and for comparison schools (comprehensive high schools matched on geography and student characteristics to the third-year new schools in the sample), supporting comparisons between new schools, established innovative schools, and conventional high schools. Details of data collection and analysis are described in the technical appendix.

Organization of the Report

The remainder of this report is divided into three sections. The first section describes the progress of new schools in their first 3 years. It first compares new schools with both model schools and a sample of comprehensive high schools in terms of the foundation's effective-school attributes. A composite of six of the school attributes promoted by the foundation is used as an index of a school's implementation of the types of structures and climate promoted by the foundation. Next, the section examines the "developmental trajectory" of new schools during their first 2 or 3 years

of existence, as measured by this index and its component attributes. Qualitative data obtained from interviews and focus groups are used to illustrate and explain trends seen in the indices based on survey data.

The next section turns to a focus on schools undergoing redesign, documenting the difference between comprehensive schools in their planning year and the resulting small schools or learning communities 2 years later, as measured by the implementation index and measures of the individual school attributes. Evidence from fieldwork is used to discuss changes in school relationships associated with redesign and how these relate to raising expectations for student learning. We also describe several cases where there are notable differences among the small schools created from the same comprehensive high school and discuss possible explanations for this variation.

Finally, the report concludes with a summary of our findings regarding persistent challenges and progress that new and redesigned schools experienced in their first 3 years and implications of these findings for the initiative.

New High Schools in Their First 3 Years

This section describes the early progress of new schools in implementing the type of schooling environment envisioned by the Bill & Melinda Gates Foundation.

Implementation Progress of New, Model, and Comprehensive High Schools

In this section and throughout this report, survey data are used for comparisons both within and across school types. The quantitative data came from surveys administered to teachers, students, and school leaders in 2002, 2003, and 2004. Relying on the survey data, we constructed measures of six of the seven effective-school attributes that the foundation intends to foster in the high schools it supports: personalization, high expectations, respect and responsibility, common focus, collaboration, and technology as a tool.[2] We then created an implementation index to capture the collective level of implementation of these six attributes in schools (see the technical appendix for details about the construction of these measures). Higher values on these measures indicate a stronger presence of the attributes.

We compared the effective-school attributes and the overall level of implementation for first-year new schools, model schools, and comprehensive high schools. Figure 2 shows the average values for attributes and the overall implementation index for each school type. The attribute and implementation index values for each school were computed as standard deviations around the mean value for all schools in the dataset, controlling for a school risk index[3] and the year of survey administration (see the technical appendix for details about the analytic methods). The x-axis, therefore, represents the average score for all schools in the dataset on each attribute or the overall index. As shown in the figure, when compared with model schools, first-year schools had a lower overall level of implementation and less presence of all attributes except high expectations and common focus. Most of the differences were small, however, and none was statistically significant.[4] The differences between first-year schools and comprehensive high schools, on the other hand, were substantial, with the former significantly outperforming the latter on all measures by a wide margin (p < .001). These results suggest that, although in general new schools in their first year of operation had not quite reached the standards set by the model schools, they clearly demonstrated a stronger presence of the effective-school attributes than did traditional comprehensive high schools.

Figure 2. Adjusted School Means on Implementation Index and Effective-School Attributes in Model Schools, First-Year New Schools, and Comprehensive High Schools[5]
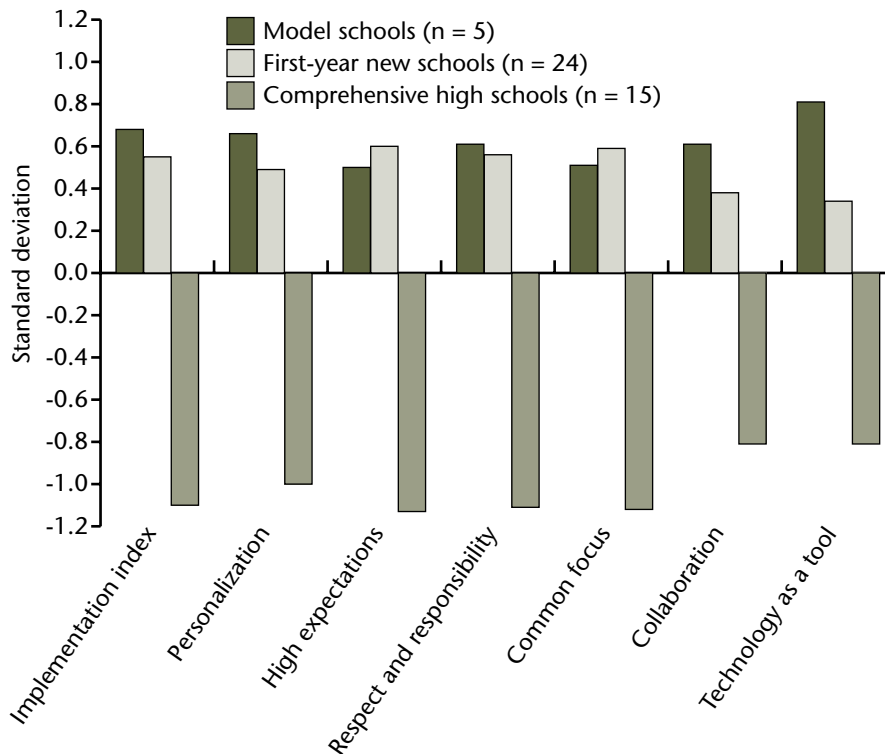
One should exercise caution, however, in attributing the differences between different types of schools entirely to the reform efforts. It is possible that, in addition to the reform activities, schools also differed systematically in other ways that would have exerted an influence on their organizational attributes. Although we adjusted for the student risk factor in making the comparisons between different types of schools, there could well be unmeasured differences across the school types related to the implementation variables.

Vignettes of two schools, Somerville[6] (a third-year school) and Wodehouse (a second-year school), are provided here to illustrate how these attributes are manifested in new schools. Both vignettes describe schools that score relatively high on the implementation index (more than 1 standard deviation above average), indicating that the schools are operating in ways that are consistent with the foundation's effective-school attributes. Because the foundation's attributes represent a broad vision of schooling rather than a specific school model, schools that score high on the index can have very different functional designs, but any school with a high index will be very different from the prototypical

comprehensive high school. Somerville, for example, has a strong focus on supporting students academically through a literacy focus and other supports, and its teachers work in collaborative teams. At Wodehouse, a student-centered school, students spend much of their time pursuing individual projects according to their own interests, and adults at the school function as mentors rather than teaching formal classes. In both school environments, the positive relationships envisioned by the foundation feature prominently; relationships between students and teachers, among students, and among teachers are close and based on mutual respect and responsibility.

Exhibit 1. A Third-Year School: Somerville

Somerville High School is a new school in its third year, in an urban community comprising primarily Latino, African-American, and Asian families. Approximately 80% of the students are eligible for the free or reduced-price lunch program, and 67% of the students' parents have not graduated from high school.

Somerville offers students traditional, instructor-led classes, as well as weekly advisory periods. Each faculty member, including the principal, leads one advisory, and students remain with the same advisor throughout high school. The advisory model contributes to one of Somerville's hallmarks: strong relationships between students and teachers. One teacher's sentiment that "just about every kid has someone they can go to" was echoed by parents, students, and teachers alike. When describing their teachers, students commented that "it is like you can rely on them, all the teachers." Through advisories, looping (a scheduling approach that keeps teachers and students together for multiple years), and after-school tutoring, Somerville has created an environment in which teachers and students are connected with one another both academically and personally.

In Somerville's first year, establishing the foundation for these relationships required the enactment of a schoolwide discipline practice. Teachers were initially overwhelmed with problem behaviors exhibited by students. One teacher noted that even in their third year, "I still think we're still battling, recovering from year one, where we were so shell-shocked by kids yelling and throwing things and being abusive." Faculty decided that discipline enforcement would be directly addressed by the misbehaving student's advisor, and consistent policies have led to widespread improvement. As students have learned to behave more appropriately within the learning environment, teachers have been better able to focus on developing students' academic skills.

As part of the academic focus, a full-time literacy specialist assesses the reading and writing levels of students upon arrival. Students identified as needing additional support are required to take one of two classes taught by the reading specialist. The literacy specialist uses weekly staff meetings to establish and share strategies designed to improve reading and writing skills. With literacy strategies in place, Somerville staff plan to turn more attention to the math and science skills of incoming freshmen.

This common academic focus that Somerville teachers share is the result of a strong model of consensual decision-making, the keystone of Somerville's robust professional community.

Somerville's staff are dedicated to a collaborative model in which school decisions are a shared responsibility, lesson planning is coordinated with colleagues, and, as one teacher stated, "everybody's voice on the staff" is welcomed. Teachers are consulted on most aspects of Somerville. They participate in the hiring of new staff, the selection of teaching materials, and the development of school policies and procedures. Students, too, are included in decisions and are actively tackling such issues as the social segregation that persists along racial/ethnic lines. Staff resoundingly agree that "there is a devotion to democratic decision-making and plenty of resources," allowing for strong buy-in of the school community.

One key to the success of Somerville is the wealth of resources available from outside the school. Although Somerville is located in a depressed community, it is in close proximity to a university with a well-respected teacher preparation program, as well as a thriving high-tech business community. Resources important to the school include student teachers whom the university channels to Somerville classrooms, a nonprofit group that leads an after-school entrepreneurship class, and several companies that offer students the opportunity to shadow employees. Because of strong local support for helping Somerville's population of students, as one seasoned teacher reported, "a lot of the resources just come, just show up." These resources have eased teachers' work schedules and allowed the faculty the time and energy to work collaboratively.

Ultimately, Somerville staff, parents, and students are pleased with the school's progress. Teachers have set a high bar for students to reach. Students agree that all of the teachers "push you" to achieve. The teachers "have high expectations, and it grows over the year." Teachers promote student learning of both in-depth subject knowledge and, according to students, "how to be responsible." Staff see opportunities for Somerville to solidify and strengthen its professional community, its academic culture, and relationships among students and faculty when it moves to a new, more adequate building in fall 2005.

Exhibit 2. A Second-Year School: Wodehouse

Wodehouse High School is a new school in its second year of operation, located in a rural community. There are 72 students, approximately 90% of whom are white. Despite the relative racial/ethnic homogeneity, school staff report that the school serves a broad socioeconomic spectrum. Currently, the school serves 9th and 10th grades and plans to add a grade in each of the next two years.

One of Wodehouse's defining features is its project-based, student-directed approach to learning. "The school encompasses everything—what you're learning and your personal life," one student said. "Everything is integrated and tied together. Nothing is cookie cutter." Rather than taking traditional instructor-led classes, students at Wodehouse select, design, and conduct projects based on their interests. One student who had a friend with cancer, for example, researched the topic and then wrote a story about a boy with leukemia; another estimated costs for a new district computer system. In addition, every student at Wodehouse is required to have an internship related to an interest. For example, one student was fixing computers at a school site; another was testing water quality in well samples. Several of the adults outside the school who serve as mentors for student internships commented that the program could use more structure—they didn't always know how to keep the students busy or how to keep the

internship content "academic." Most students, on the other hand, seemed very pleased with the system and with their mentors. "My mentor is like a friend," one student said. "We have lunch together. They're kind of like a teacher."

Evident even on a brief visit to campus is Wodehouse's emphasis on respect in all aspects of life there—respect between students, between adults, and between adults and students; respect for hard work and academic achievement; and respect for differences in values and opinions. Academic discourse among students flows freely, particularly during student-directed Socratic seminars. As one student said, "it's really cool to have that trust" and respect of one's peers and teachers. One recurring theme among students in focus groups was Wodehouse's unique lack of cliques. Another was how well the teachers and school leaders listen to the students, both in and out of the classroom. For example, students successfully proposed modifications to the school's teacher-created "values statement" to capture the spirit of individual advisories.

The professional community at Wodehouse also appears very strong. Interviewed teachers had only positive things to say about the camaraderie, collegiality, and supportiveness of the staff. All staff members participate in twice-weekly meetings, including "collaboration days" every Monday, in which they meet for 2 hours to discuss staff concerns, teaching strategies, and upcoming issues.

Implementation of the school's design has not been without tensions, however. For example, citing pressure to meet the standards of No Child Left Behind, six of the school's schoolwide morning assemblies—a core feature of the grantee's school model—were replaced with standardized test preparation sessions, a somewhat controversial move that seems to be appreciated by students and parents. Despite the challenges, however, students, parents, teachers, and administrators alike appear sanguine about Wodehouse's mission and outlook. In the words of one student:

> At a regular school, you don't really get the "big picture." And you go through school, and you think, "Oh [expletive], I'm an adult; I have to figure it out all at once." Here we figure out why we're learning the math and how it's going to apply when we get out of high school. When we get out of high school, we'll have a better idea what we want to do.

Relationships in New High Schools

Across the new foundation-affiliated schools we visit each year, close relationships make for school environments that are palpably different from the anonymous environment of the typical comprehensive high school.[7] One striking attribute is the *personalization* evident in these schools. In contrast to their previous schools, where, they say, teachers didn't always know their names, students tell us that:

> I can really relate to [my advisor]…She really GETS me. And, like, she'll know what I am thinking, and I don't even have to say it.

> I have two teachers who became my best friends. They are like my close people; I can call them for anything. They have seen me grow over the last 2 years; I don't think I would have that at another school.

> I think that in big schools teachers only see a part of you. The teachers here see a lot of us. They know who we are basically a hundred percent.

These relationships are fundamental to the ways that teachers describe their jobs. According to one teacher, "As a teacher you are not just a teacher. You become an uncle, a cousin, a brother, a bank, a taxi service. It goes beyond the classroom." Teachers describe being invited to students' birthday parties or helping them deal with their emotions at a parent's funeral. "I think it's great that I'm in a place that forces me to not just be an English teacher," said one teacher. "I'm a teacher of young people."

Another component of relationships in the new schools we visited is the *respect and responsibility* that members of the school community show for each other. Students feel that they are treated with respect by teachers and that the small size of many of these school communities helps promote respect for each other, as well. "I think students get along here better because everybody knows each other," said one student. Another suggested that knowing each other well helps them get over stereotypes and recognize how much they have in common: "At the beginning of the year it starts off with kids that are totally different from each other, and then by the end of the year...it's like everyone's pretty much the same."

Collaboration and professional community among teaching staff is another striking component of the environment in many of these new schools. Although busy schedules often make it difficult to collaborate as closely as teachers would like, teachers say they feel connected to and supported by one another and often actively collaborate on joint curricula or on supports for individual students. In her school, said a teacher, "the faculty workroom is actually a workroom, not a place where people gossip or nap. Teachers build lessons in there, bounce ideas off each other, call students' homes when they don't come to school." At one school, weekly staff meetings include teacher presentations and peer feedback on curriculum lessons; one first-year teacher said these were tremendously valuable sessions "because people are trying to help you improve as a teacher."

Other attributes of cultures in these high schools build on the relationships described above to promote academic rigor. Professional communities of teachers are characterized by a *common focus* on the school's vision and on the shared belief that all students can succeed. This

student-centered focus, combined with close teacher-student relation-ships, can translate to *high expectations* and to results both in and out of the classroom. One student described how teachers who know her well inspired her to reach higher academically:

> They have conversations that really mean something. They say, "I see you've done this and this, but I really think you can go deeper"…The way they talk to you, it seems that they *really* want to help you, and it motivates you. If my advisor believes in me, I think I can really do it and strive higher and higher.

Although some schools continue to struggle with setting and maintaining high expectations for their students, particularly schools with entering student populations that are performing far below grade level, the rela-tionships that are in place in these school environments are often an important foundation for student engagement with academics.

Still Works in Progress

As illustrated in Figure 2, the first-year new schools in this study exhibited significantly deeper implementation of the foundation's attributes than did the comprehensive high schools in our sample, but they had not yet reached the level of model schools. This is not a surprising finding. The model schools are all more mature than the first-year schools, having been open for 3 to 9 years when surveyed; they had more time to implement and fine-tune their designs. In addition, model schools have a different relationship to their foundation grantees than do the new schools that opened later. In most cases, grantees opened the model schools as a deliberate testing ground and showcase for the schooling model they wanted to promote. As such, models often receive a great deal of sup-port from the grantee organization, in some cases even having one of the visionaries of the grantee organization in the role of school leader. By contrast, the new schools in our sample often represent an attempt by grantees to replicate their model schools, opening schools with similar designs within a region or across the country. As a result, they experience a different level of support and closeness of contact with the grantee orga-nizations than did the model schools—a difference that has implications for their capacity to respond to implementation challenges.

Across the sample of schools represented in Figure 2, there was considerable variation in implementation progress, not only between but within school types. Among the first-year schools, the implementation index ranged from -.43 to 2.64 standard deviations, with the majority of the first-year schools, 18 out of 24, above the average level of implementation across school types (see Figure A-1 in the technical appendix).

Exhibit 3 presents a description of Stevenson, a first-year school that experienced early challenges to implementation and scored relatively low on the implementation index.

Exhibit 3. A First-Year School: Stevenson

Stevenson is a first-year school located in an industrial urban neighborhood. The school currently serves 9th and 10th graders and will add a grade each year. According to the principal, the school design aims to meet state standards and to graduate students prepared for college by providing a "rich and challenging curriculum, one that stresses hands-on work, speaks to the lives of adolescents, and addresses real-world matters." In its first year, the school had already put in place a number of distinct design features to support this vision, including 90-minute instructional blocks, "ramp-up" courses for students who enter below grade level in reading or in mathematics, gender-segregated advisories, a schoolwide book campaign, and home visits.

Early successes for Stevenson include creating a safe and welcoming learning environment. The teachers feel they know their students "fairly well" because of the small size of the school, and staff consistently report that they get along, feel respected, and make decisions collaboratively.

Several first-year challenges, however, hindered a smooth implementation of the school design. A temporary facility leased from a local university constrained course offerings and affected instruction and school environment through limited Internet access and a lack of library, physical education, or cafeteria facilities. The lack of a permanent facility also hindered student recruitment: leaders estimate that the school lost 25% to 30% of its prospective students when parents saw no sign of an adequate school site. Teachers also struggled with planned efforts to implement the school's college-preparatory focus with a population of students who lacked time management and study skills. Student behaviors were not consistent with the respectful relationships school staff hoped to develop, in part, they conjectured, because the facility constrained student and teacher interactions to an uncomfortably confined space. The school's design coach recognized a need for all teachers to convey a consistent message about expectations to the students and identified stressing high expectations in both academics and behavior as a high priority for the school's second year.

Despite their early challenges, school staff were optimistic about the coming school year. Teachers anticipated that they would start the year with some policies, procedures, and refined curriculum already in place and expressed hope that their year would go more smoothly in their own facility. (As it turned out, the school had to spend its second year in temporary quarters on the campus of one of the district's comprehensive high schools.)

Along with the overall distribution of new schools on the implementation index, the technical appendix shows correlations between the implementation index and potential explanatory factors derived from the survey data (see Table A-1). Several factors, including the size of the school and its leadership and decision-making processes, correlated strongly with

apparent success of implementation. These factors will be explored further in the sections to follow that describe the implementation progress of new schools over their first several years.

## Developmental Trajectories of New High Schools

The preceding section contrasted the implementation status of new schools during their first year of operation with that of model and comprehensive high schools. Now we look at multiple years of data for new schools that have been open for either 2 or 3 years, to try to understand their path to maturity. Although schools vary in the amount of progress (or regression) experienced from year to year, we find some general patterns that seem to represent common challenges that are characteristic of the early life of a newly created innovative high school.

Figure 3 compares the mean implementation index, along with the individual effective-school attributes that constitute the index, in the first and second years of new schools with at least 2 years of survey data (n = 18). As in Figure 2, a score of zero on the vertical axis represents the mean for all schools in the dataset. Although new schools in their second year still scored significantly and substantially higher than comprehensive schools on every measure,[8] the figure shows a substantial decline from the first year to the second year on all measures except the use of technology as a tool.[9]

It is important to consider these early results in light of the empirical literature describing the implementation trajectory of large-scale school reform efforts. Often, new or reforming schools get worse before they get better (Borman, 2005). In Borman's meta-analysis of studies of comprehensive reform in high-poverty schools, for example, effects of reforms in their first year appeared quite strong, with a drop in the second year and improvement by about year 5.[10] The decline in the attributes in year 2 of the foundation-supported schools' existence is consistent with this earlier research.

Also consistent with past research is the fact that our results for year 3 are more encouraging but remain mixed. Figure 4 displays year-to-year implementation index values for each of the new schools that we surveyed for 3 years (n = 8). The figure demonstrates that although the trajectory of early implementation varied by school, many of the schools were experiencing net improvement by their third year. Of the eight third-year schools surveyed in 2004, six showed overall improvement in their implementation index over the 3 years.[11] On the other hand, early progress was less encouraging for the remaining two schools. It should be noted, however, that the only new school with a negative

Figure 3. Change from First Year to Second Year of Operation in Unadjusted Means on Implementation Index and Effective-School Attributes in Pooled Second-Year New Schools (n = 18)
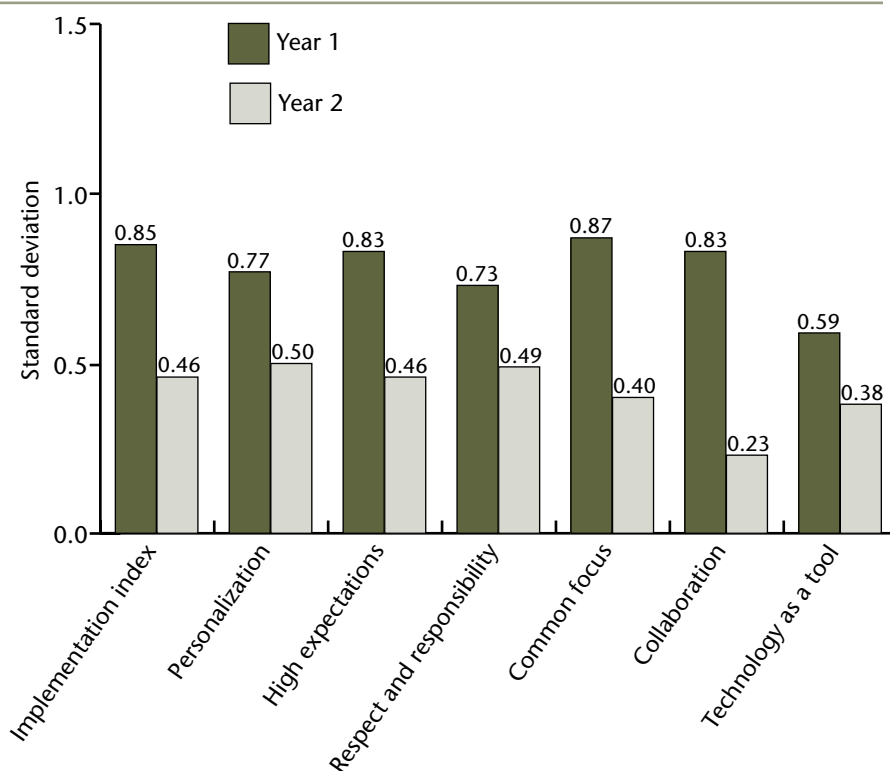
year 3 implementation index (School 6 in Figure 4) was created from, and housed within, a comprehensive high school. One could argue that this school, therefore, is not really an independent start-up (and indeed, the qualitative data confirm that the school lacks full autonomy from the larger school). Whereas third-year results at this stage are based on a small sample of schools and therefore are tentative, a larger sample of schools with 3 or more years of data in future years will strengthen our confidence in the apparent trend for new schools not only to open with a strong climate but to experience a net deepening of their implementation of the effective-school attributes over their first 3 years.

The remainder of this section looks at possible explanations for this varied—and at times halting—early progress, based on interviews and focus groups with school staff, students, and parents, as well as survey data. In particular, we discuss challenges and enablers related to growth in school size, leadership, teacher capacity, and district context. Although some of these factors are common across many different reform contexts, we focus here on issues that are particularly characteristic of new

Figure 4. Change in Implementation Index from First Year to Third Year of Operation in Third-Year New Schools (n = 8)
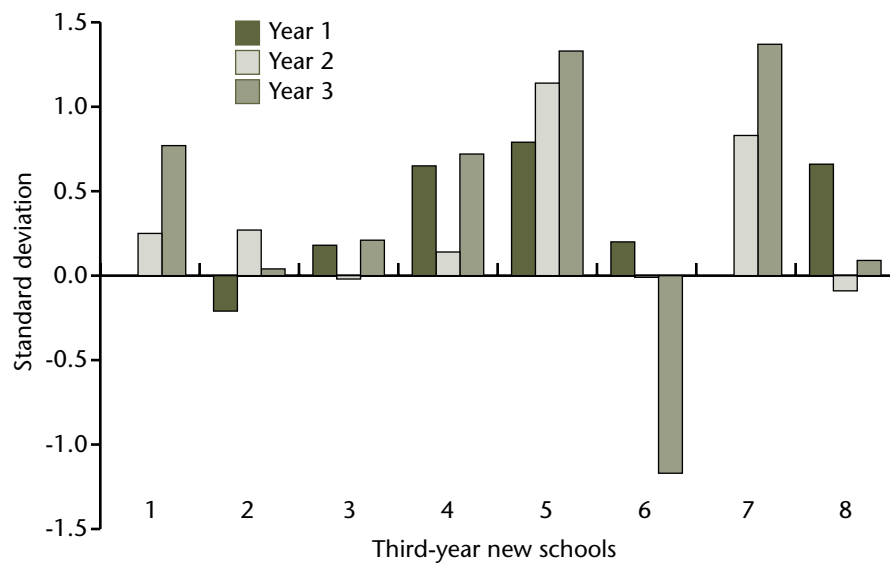
Note: Two third-year new schools (Schools 1 and 7 above) did not have adequate response rates in the first year; therefore, their first-year data are not presented in the figure.

schools with relationship-based designs, as well as on contextual issues such as the widespread district budget crises that have been particularly prominent during the years in which we collected data.

Growth in School Size from Year to Year

Many new schools follow a staged path of implementation, beginning with one grade only (usually grade 9) and adding a grade in each subsequent year. With this rollout strategy, schools face scaling up as they simultaneously attempt to deepen implementation of the effective-school attributes. One of the most striking characteristics of the second-year experience in these schools, then, is the fact that student and teacher populations are substantially larger than they were the year before. Other reasons for growth include more idiosyncratic staging strategies. For example, one school grew from one grade in its first year to all four grades in its second year. Other schools made the choice to recruit a larger student body in their second or third year for financial reasons. Overall, in the schools we surveyed that opened in 2001 or 2002, average student enrollment grew by more than 50% from their first to their second year, from a mean of 112 to 172. School size was negatively correlated with the implementation index and with all six school attributes: correlations ranged from -.36 to -.54.

Qualitative data showed that school growth had a direct impact on the relationships in these schools. Many of these by-products of growth are described in an earlier evaluation report (AIR/SRI, 2004). In particular, although these school environments were designed to foster close relationships between students and teachers for all four years, a first year with only 5 to 10 teachers and fewer than 100 students may create an extremely close environment that is difficult to maintain as the school grows. "It was a blast," said one student of the close, family-like atmosphere of the student body in the first year, but he found in the school's second year that it was harder to connect with friends and impossible to learn all the names of so many new students.

Another school leader commented on the "only-child syndrome" the previous year's students exhibited in the fall when they saw their teachers' focus partially diverted to the new ninth graders. Overall, the closeness of these school environments is still described by students and teachers in superlative terms, but the unique character of the first year is difficult to sustain. In moving from the second to the third year, the effects of increased school size on personalization are less dramatic than those in moving from the first to the second year, but in some schools the addition of a new junior class introduced a social separation between upper and lower grades in the school that was noticed by staff and students. In some second- and third-year schools, teachers also struggled with additional changes they found necessary in order to manage a larger student body: more formal policies and procedures were often required, as were scheduling compromises to accommodate more courses for more grades.

With a new class of students come new teachers, often bringing more diversity of vision and teacher acculturation challenges not faced by the founding teachers who had worked together to design the school in its opening year. One teacher at a school with a distributed leadership model noted that the original and new teachers functioned as separate "voting blocs" in 2003–04. Another suggested that it is "difficult to grow and solidify values at the same time." As a result, many of these schools are paying more attention to teacher acculturation processes as they mature. These issues raise an important distinction between new schools and more mature innovative schools that have had time not only to develop a distinct culture but also to establish customs for induction into that culture. These important induction processes are more in flux and less institutionalized for new schools undergoing significant change from year to year.

Growth in size also brought on facilities problems. A number of the new schools were forced to open in facilities too small to support the full envisioned population and hoped to move in time to accommodate the new

grades. In actuality, however, many of these schools are still making do with facilities they initially envisioned as temporary. Of the eight third-year schools visited in 2004, six reported that schooling activities and implementation of their desired model were considerably constrained by their current building. Staff at one school reported that they no longer had enough space and equipment to give each student his or her own workspace and computer. At another school, individual classrooms had to be combined into larger, noisier classroom "suites." At still others, the whole-community meeting space so central to the school's design had been outgrown. In some cases, lack of contiguous facilities as the school grew (e.g., a school in which upper grades were in a different small building from lower grades) presented a challenge to developing a fully linked teacher professional community.

In other ways, however, the addition of more grades adds to the stability and focus of the school. Staff and students at several second-year schools noted that 10th graders were behaving more maturely because they felt the need to act as role models for the younger class, a responsibility that is sometimes formally instantiated in student mentor programs and other deliberate role assignments. In addition, in third-year schools that had upperclassmen for the first time, staff noted that upperclass programs such as internships, combined with the looming college application process, helped to solidify the school's college-prep mission and reinvigorate staff around that mission. Said one school leader in a third-year school, the fact that they now had an 11th grade "brings us one step closer to our graduating class, which is when the light really turns on."

As an alternative to this pattern of dramatic growth as a grade is added each year, a small number of the new schools in our sample chose to open with all four grades at once. One of these was a reconstitution of an existing school, and another was a new school that had its origins in an academy within a comprehensive school that teachers and students chose to leave. In both of these cases, the schools opened with all four grades at once because they were serving an existing student population. Designing a full school from scratch requires a daunting amount of preparation, including the development of 4 years of curriculum, as well as processes ranging from freshman orientation to upper-level internships and graduation, all at once, something few new schools have the resources to do. Although it has its challenges, the more common gradual rollout strategy allows a more manageable first year, as well as time for the school's culture to be seeded with a small, close community before more students are added.

School Leadership

Another key success factor that has become more apparent as new schools develop is the capabilities and stability of the school leader. Skillful school leadership is widely recognized as a fundamental component of successful reform (e.g., Fullan, 2001). Leaders are essential for setting the vision and inspiring its implementation, spearheading the instructional culture, and acting as the "face" of the school to the community, among a great many other important roles.

It is important, then, that in their first 3 years, the schools in our sample experienced a great deal of fluctuation in leadership. Of the eight third-year schools we visited, four no longer had their founding principal. Two others no longer had a founding co-principal or assistant principal.

One of the four school leaders who left was seen as a strong leader and, for political and budgetary reasons, was not replaced after she departed in the school's first year. This school (School 6 in Figure 4) is the one third-year school in the sample of eight schools whose implementation index has shown a steady decline each year since it opened. In some other cases, the leadership change was seen by staff as an overall improvement in fit and skill set for the complex task of running a new school of the sort promoted by this initiative. Exhibit 4, for example, describes the role of the principal in facilitating a strong school culture at Lancaster (School 7 in Figure 4). This principal took over the job in the school's second year. As Figure 4 shows, this school made strong gains on the implementation index in its second and third years. In its first year, before the leadership change, survey response rates were too low to report, and district staff pointed to the first-year principal as an impediment to implementing the school vision.

Exhibit 4. Leadership at Lancaster

Located in a major urban area, Lancaster High School serves approximately 200 9th- to 11th-grade students, the majority of whom are African-American. Lancaster is physically located in an annex of a large, urban comprehensive high school, but it is a distinct and autonomous small school. Although Lancaster's surroundings can best be described as economically deprived, with abandoned houses, two correctional facilities, and little to no commerce, the campus is very clean and well maintained, with no evidence of vandalism.

In 2003–04, Lancaster was in its third year of operation. The current principal joined the school in the summer before its second year, after an extremely difficult first year for the school. Teachers attributed wholesale changes in the school environment and design to this leadership change: "Although this is our second year," remarked one teacher after 1 year with the new principal, "it is really our first." The principal has encouraged a community atmosphere marked by student and adult responsibility for their surroundings. She has also instituted a democratic decision-making process at the school, allowing everyone an equal chance to provide input

and suggestions. Teachers, parents, and students described the principal as very fair and as someone who always consults them before making major decisions. According to the guidance counselor, Lancaster has "wonderful leadership at the top. Everyone is always involved in decision-making. We all agree together."

This democratic leadership style has infused the school community. Teachers are encouraged to step up to lead, model, and make decisions. Students are also involved in decision-making. According to one teacher, when the school experienced tardiness problems, the principal "gave the students a voice on how to govern other students," asking the student government to establish a system of reasonable punishments for students who were consistently tardy. Adopting this inclusive approach, teachers encourage student involvement in the learning process, allowing them to make their own tests, write mission statements for classes, and present topics to the class. As one student explained, "You have a lot of input. They may ask you to even create an assignment or teach a section to the class."

The principal's strong leadership is also evident in her role as instructional leader of Lancaster. Because she has been able to delegate tasks such as bookkeeping and grant writing to other staff, she reported that "I don't have to stay in here [the office]. I'm out there, which is what I love. I'm in the classrooms," doing walkthroughs and coaching teachers. Occasionally serving as a substitute, she said, "I get a chance to teach. I use that time to really build a relationship with the students." These relationships are clearly appreciated; in the words of one parent:

> You can see it: the love of the students. She puts all of herself into her students...She is wonderful. She is a jewel to this school.

Overall, as described in the technical appendix, cross-year changes in a measure of the quality of school leadership based on teachers' survey responses paralleled the patterns of change in the implementation index for both new and redesigned schools. The strong correlation (r = .69) of the principal leadership measure with the implementation index suggests that leadership is important to the success of these schools.

Although leadership capacity is a critical factor for any school, its absence or fluctuation holds particular challenges for a small school, especially when it is still developing. In larger schools and in schools that are already well established, the existing infrastructure can often provide some level of support for operations even if a strong leader is lacking. But "at a small school," said one teacher, "you have one administrator. If they're not working well, the school's not working well." Even at schools in our sample with distributed leadership models, important related structures were generally still under development in the schools' first several years, and faculty teams were in need of consistent leadership and facilitation. As a result, leaders of new schools too often found themselves inventing new leadership structures rather than stepping into an existing structure, making the transition doubly difficult.

Our data on the impact of a lack of leadership are consistent with findings that are commonly reported in the school reform literature (e.g., Berman & McLaughlin, 1978; Leithwood & Riehl, 2003; Washington School Research Center, 2002). For example, teachers told us that with a lack of vision at the top and a lack of instructional leadership, the school flounders. According to one teacher, "There's no teamwork among our teachers. There's no unity and vision except we want to work well for our students. Without a strong leader to hold it together, we have nothing."

With their small staffs and personalized environments, new schools that are small by design appear particularly vulnerable to problems associated with a change in leadership. In schools whose culture is based strongly on relationships, school community can be disrupted significantly by a leadership change. School staff consistently emphasized the personal nature of adult relationships at the school and the emotional impact of turnover. A staff member at one school described the process of rebuilding a once-close community after the founding principal left: "It takes a while for everyone to feel like they trust one another again, and we're just reaching that stage." Teachers at another school described the emotional process of leadership turnover for staff and credited a coach from their grantee organization with "masterful facilitation" that helped them make it through.

The range of processes that may fail without strong leadership suggests that the position of principal at a new school of the sort promoted by this initiative requires a special set of skills. The sidebar describes the skills that successful school leaders in this initiative exhibit, as described by their staff and students. High turnover rates that these schools have experienced over their first 3 years could be a function of the rarity of this combination of skills or of the fact that the needed skill set for leaders often evolves as the school matures (McLaughlin & Mitra, 2001). In the words of one teacher (describing a school leader who had been "instrumental" in launching the school but was ultimately replaced), "A lot of times, the person who starts something isn't the best at keeping it going."

It is clear that the capacity of the school leader talent pool is a linchpin for the success of this initiative. Recognizing this need, some of the initiative's grantees have begun to offer programs to develop and fortify leadership skills in principals. The Big Picture Company, for example, provides a year of training in the "year before opening" for those who have been selected to be principals at new Big Picture schools. This intensive year includes group trainings and one-on-one mentorship, as well as visits to other new schools in their first year. Though not funded by the foundation, one effort of New Visions for Public Schools is the Principal Mentoring Program, which links new principals with experienced mentors. These

Skills Exhibited by Successful Leaders of New Schools

Of the principals who have persisted in the early years of this initiative, very few are described as commonplace by colleagues and parents. More often, superlatives are the adjectives of choice. Successful principals are described as "top notch," "fabulous," "outstanding," "just incredible," or "awesome to work for."

What makes these principals so special? According to teachers and parents in interviews and focus groups, successful principals possess a wide range of leadership skills, including:

- Encouraging a cohesive school vision. "The key person is [the principal]. She has a great vision for the school, and at all times she communicates [it] to the staff."
- Connecting with students and parents. "It is so rewarding to sit in [the principal's] office. He can really have an impact on students who are having trouble."
- Facilitating collaboration. "[The principal is] an artist in dealing with all different kinds of people and can pull groups together."
- Supporting teachers. "[The principal] is very supportive. I don't think I've asked for anything that he has said no to."
- Soliciting teacher participation in decisions. "[The principal] has really done a solid job in providing us [the teachers] a voice in terms of decision-making. There are very few decisions she makes on her own…That's been really beneficial to us."
- Promoting effective instruction. "[The principal is] the leading expert on curriculum."
- Recruiting students and parents. "[The principal does] an amazingly good sell."
- Working toward a sustainable culture. "[The principal] creates an energy so that if he left it would keep on going."

mentors visit the new principals over the course of a year and provide training that is targeted toward the needs of the new principal and his/her school.

Teacher Turnover

Some of the new schools in our sample were struggling not only with school leader turnover but also with teacher turnover. Although some turnover is expected—nationally, 15.1% of teachers annually leave a particular school (Luekens, Lyter, & Fox, 2004)—several schools in this sample were experiencing turnover at much higher rates. For example, at two new schools, not a single one of their founding teachers returned in the second year, and at four others, only two teachers returned in year 2 (from first-year teaching populations that ranged from five to nine). Overall, in the eight third-year schools in our sample, only 47% of the 91 teachers who had been at these schools in their founding year (2001–02) were still there at the end of their third year (2003–04).

As is inevitable in developing organizations, some teachers leave because of a lack of fit with the school's vision and philosophy. In many cases, these teachers are replaced by new teachers who are more appropriate to the school. However, a growing problem for the initiative is teacher layoffs, which is a significant issue in some districts. Most district-union

contracts call for teachers with the least seniority to be laid off first. For this reason, layoffs are particularly problematic for new innovative schools with their relatively junior teaching staff. (Of the 13 second- and third-year schools with survey data, 9 have a staff with 50% or more of their teachers in their first 5 years of teaching.) At one second-year school with a contentious relationship with its district, most of the teaching staff has turned over because of layoffs each year (in the school's first year, all but two teachers were laid off). Next year, lamented one of the stable staff members at this school, "We will have new staff who will need to be trained, and then they will leave."

In schools trying to implement multiyear relationships between staff and students and collaborative relationships among staff, teacher retention is a critical enabler. The principal of one third-year school attributed the school's low teacher turnover to the "wonderful community" that teachers and students have been able to build. By contrast, teacher turnover is enormously disruptive to school communities. As one student described, "relationships take time to build, [and that] is lost" when teachers leave. When turnover is the result of layoffs, a further risk is that schools will be assigned replacement teachers with seniority in the district rather than being able to recruit teachers who are a good fit. One school leader emphasized the fact that small schools have so few teachers that they must count on every faculty member to instantiate the school vision and provide effective support to children. "We cannot have people down here that don't want to work," she said. "We cannot have people down here who don't care about kids or care about teaching. It'll die."

Teacher Workload

An additional threat to the stability of the teacher population is simply burnout. The frenetic pace of teacher work life in new schools, described in earlier evaluation reports (AIR/SRI, 2003b, 2004), was an issue that remained unsolved in most new schools in their third year. As before, teachers reported that lack of time restricted the degree to which they were able to collaborate, mentor other teaching staff, write applications for grants to supplement their budget, or be there for the kids to the extent they would like. In many first-year schools, teachers attributed the magnitude of the workload to the predictably frenzied pace of start-up and expected it to lessen in succeeding years. After 3 years, however, staff still described themselves as "exhausted" and "worn out," and some raised workload as the biggest issue that needs to be resolved in order to sustain the initiative.

Staff at several of the schools we visited believe that teaching there is "too much of a job for most people" and requires a time commitment that limits the pool of well-suited candidates. At some schools, we were told that teaching is a difficult job for teachers with families, for example, or that its personal demands are unattractive to experienced teachers. The challenges tend to be exacerbated for teachers who serve high-poverty students, for whom going the extra mile for their students includes giving them rides home from sports practice, personal calls when students are absent, or other time-consuming personal requirements. A teacher in a third-year school worried that her school may not be sustainable, asking, "How long could you actually be doing this job and still enjoy it?"

New schools were trying a number of different mechanisms to alleviate the burden on teachers so that they had more time to focus on collaboration and on student needs. At schools with distributed leadership structures, for example, staff often felt the pressure of shared administrative burdens on top of their other responsibilities. At least three of these schools were shifting their leadership model to one of more centralized administration, and school leaders were giving up teaching responsibilities to take on a more traditional administrative role so that teachers did not have to perform so many administrative tasks. Some schools were building mid-semester breaks into the school schedule to give teachers a chance to rest. Other teachers were considering the need to "pull back a little from the kids," as they found that their close relationships with the students and the challenges they face could be draining as well as inspiring.

Some schools were also benefiting from creative partnerships that distributed the workload commonly assigned to teachers. As described in Exhibit 5, for example, Riverside has a close partnership with a social services organization that provides counselors based at the school, providing support for students' special needs and allowing teachers to focus more on academics. Another school partners with a local university that provides not only professional development but also student teaching assistants who free up teachers' time for collaboration and other responsibilities. Staff at these schools found that their partnerships were making it more possible to carry out the range of tasks needed to fully support the students they serve.

Exhibit 5. A Community-Based Partnership at Riverside

Riverside High School is a second-year high school located in a depressed, urban community that is primarily Latino and African-American. Riverside is designed to serve students with difficult academic histories: to be eligible for enrollment in the school, students must be residents of the school's surrounding neighborhood, be age 16 or older, have a history of truancy, and read at least at the sixth-grade level.

School leaders describe the school's philosophy as one based on the principles of youth development. School staff members are mindful of the stages of adolescent development and shape their instruction and interactions accordingly. This approach is possible through a partnership with Helping Hand Services, a community-based organization that has operated a local program serving truant students for more than 20 years.[a] Along with providing Riverside with a spacious, well-equipped school building, the organization provides a staff of counselors, each of whom works individually with 30 students from matriculation through graduation. The counselors handle all admissions processes, maintain student records and track attendance, create academic learning plans and school schedules with students according to their individual goals, meet with students regularly to review their academic progress, and lead group counseling sessions that address the emotional needs of the students. Because of Helping Hand, said the school's principal, "this [Riverside] is finally a place that cares about kids...It's the most phenomenal partnership that I've been in."

For students, the combination of good classroom teaching and in-house social work is a powerful one. According to one student, the teachers and counselors "make it so you don't want to cut [classes]...they hook you, as classes are fun." One teacher noted that the counselors allow her to concentrate her efforts on instruction. She stated, "I feel as if the partnership takes a huge amount of the emotional work of teaching [off me], allowing me to focus on [the] intellectual work of learning...[Helping Hand Services] works with them [the students] to address the personal [factors] that might hold them back." The partnership has allowed Riverside teachers to narrow their role to what they are trained and qualified to do: teach.

Nevertheless, the relationship between counselors and teachers is still being negotiated. As another teacher openly acknowledged, "it is an ongoing struggle to use the counselor-teacher relationship successfully." As teachers attempt to discipline students with the help of the counselors, for example, they are ever aware that classroom management should not interfere with the counselors' role as advocates for students. Most often, though, the partnership between teachers and counselors provides specialized supports for both the personal and academic success of each student they serve.

[a] The organization name is a pseudonym.

Other Contextual Factors

In recent years, as the new schools in this study were being established, states across the country have been struggling with great fiscal challenges. The Center on Budget and Policy Priorities reports that states in fiscal 2004 had a combined deficit of $70 billion to $85 billion (Lav & Johnson, 2003). This shortfall has forced deep cuts for many school districts. The Cleveland School District, for example, struggled to make up for a $30-million deficit in 2004 (Wheeler, 2005), and Detroit Public Schools faced a $250-million shortfall (Pratt & Walsh-Sarnecki, 2004). For the new schools in our study, district budgetary pressures exacerbated already tight school budgets and staffing models as staff worked to establish and run a school on the low sum of per-pupil allocations that results from a small student body.

In this financial climate, schools throughout the country are feeling the pinch of staff reductions and district-mandated increases in class size. Of the 15 second- and third-year schools we visited, at least 10 had raised class sizes because of district and other financial pressures. At one second-year school, for example, staff reported that class sizes increased from 20 in their first year to 30 in their second year, and teachers were seeing 150 students per day rather than the 80 students they had in their first year. In school designs dependent on close teacher-student relationships that enable personalized learning, these increases have a pronounced effect. Teachers frequently cited their ability to spend time one-on-one with students as what makes these schooling environments possible; with more students in each class, such personalized attention became much more difficult to deliver.

The relationship between student-teacher ratios and personalized learning models is most critical in schools where students work independently on projects of their own choosing, a design that can be successful only if teachers are able to work intensively with each individual student. At three California schools with this kind of design, staff told us that because they received a much lower per-pupil allocation than they would in the state that houses the model school on which their design is based, they were forced to maintain a higher ratio of students to teachers than does the model school. The leader of one of these schools asked:

> If you start adding three or four or five extra students, do we multiply that by how many hours in exhibitions, multiply that by how many [student performance] narratives, multiply that by how many [internship] meetings, multiply that by how many one-on-one meetings?…[When you add] students to bring in more revenue, what goes? What do you leave out?

Other direct impacts of district financial difficulties included reductions in services such as professional development or busing, pressures to implement class schedules that are more efficient with regard to teaching staff (e.g., reducing the number of class periods, switching from block scheduling to traditional periods to allow more classes with the same number of teachers, or reducing planning time), or halted progress on new facilities or equipment. In some cases, a chain of influences was at work. For example, in one case, a tight budget climate led to a backlash against charters, which were perceived to "take too much" in terms of district resources, leading in turn to restrictions on the school's enrollment.

Challenging district-school relations can hamper the progress of otherwise successful schools, as described in the example of DeSoto in Exhibit 6. Conversely, some of the new schools benefited from very supportive relationships with their districts. For example, in the district profiled in

Exhibit 7, the superintendent has been instrumental in running interference with the teachers' union and other local interests that perceived the new school as getting special favors and has helped to maintain positive relations between the new school and others in the district. These issues reinforce the need for supportive district contexts that can allow new innovative schools to thrive, particularly in difficult financial times.

Exhibit 6. District Relations at DeSoto

DeSoto is a stand-alone third-year school, serving an urban student population described by teachers as historically low-achieving. By 2003–04, the school had made significant strides in raising test scores and attendance rates, and approximately 70% to 75% of its graduates had been accepted into 4-year colleges. According to school staff report, although the school was still considered low-performing, primarily because of persistent challenges in math, the school has been performing better in reading than most nonselective high schools in its district. A number of strategies have supported this progress, including cross-curricular, project-based learning; literacy-focused teacher professional development; improvements to the portfolio promotion process; and student internships.

These early successes have occurred despite a difficult district context. As a result of a $13-million deficit and growing district enrollment, district leaders have pressured the school to change essential aspects of its design, despite previously promised autonomy. Recent mandates have included a directive to enroll more students without increasing staff size, forcing class size to increase from 15–20 students to 20–25 students. With the larger classes, teachers found it difficult to support all students when each of them was doing an individual project. The district also pressured the school to switch from a block schedule to a traditional six-period day, to make it possible to run the school with fewer teachers. By contrast, school staff said that block scheduling was important to instruction, as well as to teacher teaming and cross-curricular collaboration.

The school has also been challenged by district hiring policies, which require the school to wait until August to post openings. A school leader commented, "That's the most damaging thing the district does to us. I have piles of resumes here, good people who want to teach here. We can't interview." This situation has fostered high rates of staff turnover, since it has been difficult to recruit qualified staff. In addition, as of spring 2004, the district had issued layoff notices to 18 of 30 staff members. "That will dissolve this building," said the principal.

In 2003–04, the school was continuing to move forward in spite of these barriers. The principal has played a central part in this progress because of her instructional vision and philosophy of shared leadership, as well as her willingness to fight against district mandates that would be damaging to the school's design, such as a recent proposal to eliminate teacher planning time. The principal explained, "I feel I'm always the shield for the school to [let] teachers do the important stuff for the kids."

Exhibit 7. District Relations at Twin Bridges

Brenton is a small rural district that holds the charter for Twin Bridges, a new foundation-funded school that opened in 2002–03. According to the superintendent, the central office has a close, collaborative team that has been working together for many years. Many of the central office staff are longtime local residents; the superintendent began his work in the district as a teacher 35 years ago.

District personnel have been highly involved with Twin Bridges since its inception. The previous superintendent was one of the first to visit and become inspired by the grantee's model school. Along with the Twin Bridges school-leader-to-be and other district staff, he helped write several successful applications for start-up grants. Since then, district staff have played a number of important roles in support of the school's start-up. For example, the district has been very deliberate about fostering positive relations between Twin Bridges and the existing comprehensive schools, including facilitating an Academic Steering Committee made up of staff members from all area high schools.

Communication with teachers and the community continues to be very important, particularly in the current budget climate (a "double whammy," said the superintendent, with declining enrollment and greatly reduced budgets). The new school has been seen by some as a drain on district resources, particularly with its new building and lower student-teacher ratios. In fact, no money from the general fund was spent on Twin Bridges in its first 2 years, and the superintendent is also quick to point out to community members that because the school attracts students from neighboring towns, it actually brings money into the district.

The school board was also a critical enabler in a successful start for Twin Bridges. For example, members took political risks to secure the current building for the school and met as many as four times in one month in the school's first year. "I've never seen a school board work harder on any project," said the superintendent, because everyone saw it as a good thing for the kids.

For their part, school staff were very complimentary about "lots of support" received from the superintendent; "I cannot imagine a better district superintendent to work with," said one school leader. Nevertheless, with support comes control. Staffing and budgeting are conducted in close collaboration between the district office and school leadership: "The district controls the budget with [the school leader's] advice," said the superintendent. "The idea of a charter school is to always have it within reach and not let it spin out of control." Although Twin Bridges' charter status offers it some autonomies—flexibility regarding some union regulations about working hours for teachers, for example—the superintendent said that they are "very, very careful" to manage the school just as they do the comprehensive high schools in the district. "You don't want to favor one daughter over the other," he said.

Summary

As a set, the new schools funded by the foundation's initiative are very special places. Students feel cared for and supported, inspiring them to succeed; teachers work together collaboratively in a culture that focuses first and foremost on the students. Although levels of implementation vary by school, most have the "relationships" piece of the foundation's vision firmly in place.

Nevertheless, this report has described a number of difficulties that characterize the early lives of these innovative new schools. Although the first year of a new school is generally expected to be chaotic, issues such as leadership and teacher capacity and district relations have remained problematic for many schools throughout the 3 years funded by this initiative. Many exciting school designs are being implemented, but system pressures threaten their stability. Seniority-based layoffs, low per-pupil funding formulas, and staff and leadership turnover are continuing concerns that these schools are grappling with as they continue to mature.

Redesigning Comprehensive High Schools into Small Learning Communities

In addition to the creation of new schools, the foundation has invested in the redesign of comprehensive high schools into small schools or small learning communities (SLCs).[12] Included in our sample of redesigned schools are eight comprehensive school campuses that were redesigned into SLCs; we have quantitative data for seven, and four are part of our qualitative cohort. Although this sample of redesigned schools is not as large as that of the new schools we surveyed and visited, they do allow for an initial assessment of the school redesign process.

New and redesigned schools in this initiative share the goal of instituting the foundation's attributes of effective schools, but the process of transforming an existing comprehensive school is fundamentally different from that of starting a new stand-alone school. The early experience of one redesigned school is illustrated in Exhibit 8. Unlike new schools, comprehensive schools undergoing redesign begin with an infrastructure, curriculum, and staff already in place. As a result, immediate challenges tend to focus on the difficulties of changing the existing structures, as well as staff, student, and community beliefs, to create a new type of high school experience for students and adults. Whereas new schools often begin with many of the foundation's schooling attributes at least partially in place in their first year, in most redesign efforts these attributes take time to emerge. Development of the foundation's key desired attributes in redesigned schools will be the focus of this section.

Exhibit 8. The Redesign Process at Western

Western High School is a school in the second year of its redesign that serves an urban blue-collar neighborhood. Half of the 1,200 students are white, and the other half are predominantly Hispanic, African-American, and Asian-American. About 50% of the students are eligible for free or reduced-price lunch, and about 30% are non-native English speakers. The school currently serves 9th through 12th grades.

As with many schools undergoing redesign, facilities pose a serious challenge for Western. Given the rather severe physical constraints of an aging building originally constructed to hold 800 junior high school students, the Western administrators have done their best to create some sense of a "home" for each SLC. Western has been approved for a new building, but it is still third or fourth on the district's new-building waiting list.

Western's school administrators have worked to create separate SLCs without sacrificing the identity of the large campus. The assistant principal stated that the school's vision for redesign continues to be the maintenance of its big-school identity to the community at large and development of three SLCs "within its walls." One of these SLCs was created in 2002–03

from a magnet program that had been operating successfully within Western since 1986.[a] The school's enthusiasm for moving to SLCs was based largely on the educational experiences and personalization that students in the magnet program enjoyed. By the 2003–04 school year, the school had added two new SLCs with the themes of technology and business, and social systems and justice.

Classes at Western use a 99-minute block schedule. One of these class periods is used for advisories, which incorporate AVID (Advancement Via Individual Determination), an in-school academic support program that prepares students for college eligibility and success. One SLC leader said that "the advisory goes with the idea of personalization. We need to know the person as a kid, not just as a student." Students expressed mixed feelings about the new advisory program. One staff member noted that the seniors "hate" advisory because it's new, whereas the freshmen are "excited about it."

The SLCs at Western High School were designed to allow many seniors to have an internship experience. In the former magnet school, internship slots are readily available because of preexisting partnerships, such as with a state medical center. The newer SLCs, however, have not yet been able to develop a comparable number of internships and have struggled with the issue of student transportation.

Although each SLC has a leadership team, final policy decisions are made by the school district and the whole-school leadership team, which is led by the principal of the larger campus. Teachers informally have a voice in the decision-making process. Several teachers indicated that the principal is easy to approach; they felt that their voices were heard, although one teacher felt that they have a voice "within a limited confine." School leaders said that they anticipate a time when SLCs will have hiring authority, which they consider to be the most important prerequisite for independent success.

[a] One primary difference between the magnet program and the SLC is recruitment. As a magnet program, the School for Health Sciences recruited at middle schools districtwide and was somewhat selective. Since redesign into an SLC, it no longer recruits and is not selective, although it still draws students from around the city.

The year 2 evaluation report (AIR/SRI, 2004) described a number of early priorities and challenges that these schools encountered in the first year of their redesign, many of which focused on structural issues (e.g., deciding how many small schools to create and how to assign students and teachers to them). Although many structural challenges still exist, progress in these areas has allowed the redesigned schools to focus more attention on implementing a small-school culture and vision in their second year as a collection of small schools or learning communities.

For instance, the need to have the right number of teachers with the appropriate backgrounds within each SLC caused tension among the SLCs in all the schools we visited during their first year of redesign. The small schools did not yet have the skill distribution that would allow entirely autonomous staffing; therefore, teachers had to divide their time among multiple SLCs, lessening their identification with any one SLC.

Small Schools and Small Learning Communities

High schools use a variety of structures and strategies when converting into separate small learning units. There is no commonly accepted definition of an independent small school created through conversion. Many school conversion efforts are trying to obtain the virtues of a small learning community without going so far as to establish independent small high schools. These small learning communities typically:

- Have a clearly identified set of teachers and students who are scheduled together.
- Have a separately defined curriculum or learning plan, which may be created around a specific focus or theme.
- Have a common area of the school in which to hold all or most of their classes.

Other conversion efforts work to create independent small schools. Features of an independent small school described in the literature (Cotton, 2001; U.S. Department of Education, 2001) and by the Bill & Melinda Gates Foundation grantees include the three features cited above, as well as other autonomies and related features:

- A distinctive set of students and teachers (not shared with other schools or programs).
- Designated classroom space, whether in its own building or in contiguous classrooms within a building shared with other schools.
- Autonomy from the larger school in developing its own learning program.
- Its own principal or school leader.
- Control over its own structure and budget.
- Autonomy from the larger school in teacher hiring and firing.
- Ability to set its own school-day schedule.
- Having its own identification number in district and state data systems.

The more of these features a conversion school possesses, the clearer the case that it is indeed an independent entity rather than a school program or school-within-a-school.

Staff, students, and parents alike worried that students were not exposed to adequate academic rigor or building strong enough relationships with adults because teachers' attentions were divided among students and faculty in different SLCs. A year later, schools still struggled to have enough staff, particularly in schools that experienced budget cuts and layoffs in 2003–04 (for example, one small learning community lost two of its six teachers to layoffs, and another lost key support positions like an internship coordinator). Nevertheless, some retirements and voluntary departures of teachers have opened the door to hiring new teachers who bring expertise needed to address the specific academic needs of SLCs.

Student recruitment and placement also caused consternation for the schools as they began the redesign process. School leaders generally wanted to give students the opportunity to choose their SLCs. In some cases, however, student choice caused unequal distribution of various types of students, such as an SLC that contained predominantly student athletes or another with many special-needs students. This finding highlights a dilemma schools face when planning a redesign to SLCs, since

they want to provide students a chance to select and identify with their new SLC while still controlling the assignment process as a check against inequitable distributions.

In addition to addressing concerns about equity related to student recruitment and placement into SLCs, schools in their second redesign year began working to assure equitable opportunities *within* SLCs. One example of this effort was at Von Humboldt (as discussed below in Exhibit 10), where professional development focused attention on such strategies as differentiated instruction and elimination of tracking to support more effective mixing of abilities within individual classrooms.

Finally, concerns regarding facilities and scheduling undermined the ability of lead staff across the schools to focus on the academic aspect of the initiative in their first year of redesign. Although these redesigned schools were still working to create SLCs in buildings intended to support only one school, another year of time resulted in some helpful changes to physical layout and the use of time within a school day. One school, for example, managed to reduce the crossover of teachers and students among its five small schools with scheduling changes: three of the five small schools operated on the same bell schedule in 2003–04, and all small schools had first and last periods in common to allow students access to Advanced Placement courses in any of the small schools.

With progress being made on many of these initial structural obstacles, 2003–04 data from redesigned schools demonstrated that the schools were able to shift more of their attention to making progress in a number of the foundation's effective-school attributes, as the remainder of this section will describe.

Developmental Trajectories of Schools Undergoing Redesign

Redesigned schools were surveyed during their planning year before their redesign and again after the redesign had been in progress for 2 years. Figure 5 presents changes from the planning year to the second redesign year on the implementation index and the six school attributes. The figure reveals that, on average, SLCs created through redesign attained a higher overall level of implementation and demonstrated a stronger presence of all the effective-school attributes than did the comprehensive schools from which they emerged. The changes were statistically significant for four of the attributes and marginally significant for two attributes; only one attribute, collaboration, did not show statistically significant improvement. Although these redesigned schools were still far behind the new and model schools in terms of implementing the

Figure 5. Change from Planning Year to Second Year of Redesign in Unadjusted Means on Implementation Index and Effective-School Attributes in Redesigned High Schools
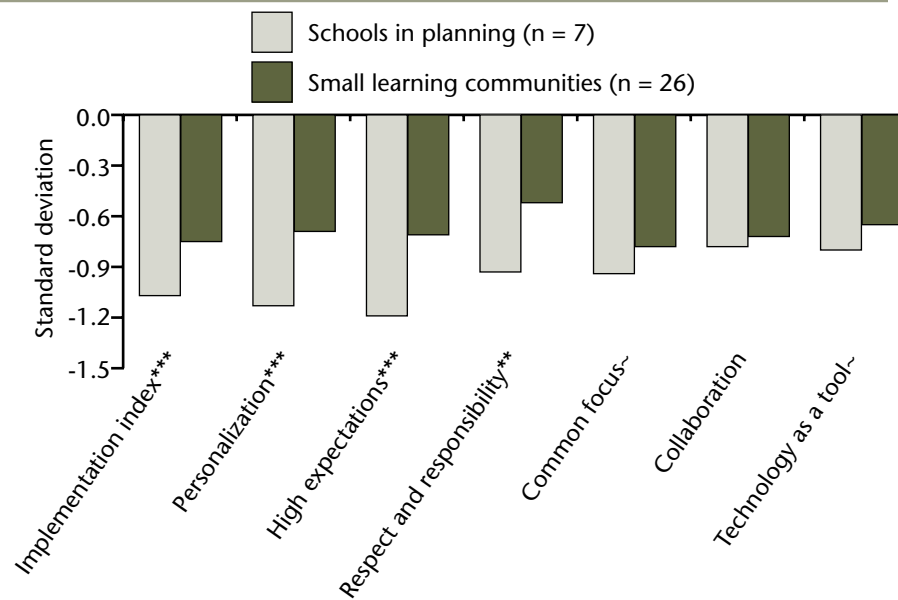
Note: Statistical significance is denoted as follows: ~ = p < .10, ** = p < .01, *** = p < .001.

foundation's effective-school attributes (as indicated by their negative index values), these results demonstrate that after 2 years of redesign these schooling environments were becoming measurably more positive for the students and teachers within them.

From the qualitative data, this section explores progress in three key attributes that are particularly fundamental to the foundation's initiative: personalization, high expectations, and teacher professional community. These three attributes provide a profile of how teacher and student relationships in redesigned schools have developed, as well as the impact of this development on the creation of high-quality SLCs.

Personalization

Consistent with both the year 2 national evaluation report (AIR/SRI, 2004) and the evaluation of Achievers High Schools in the state of Washington (Fouts & Associates, 2005), personalization continues to be an aspect of school redesign that students and teachers find exciting and encouraging. With an additional year of implementation and development, the experience of personalization seems to have deepened. In 2003–04, not only did teachers and students in redesigned schools feel they shared a connection, they also reported the impact of these relationships on the teaching and learning process.

Personalization was an important result at the redesigned schools we visited. Three of the four redesigned schools emphasized the improvement of adult-student relationships as a primary gain of the redesign process.[13] For adults at these three schools, the impact of personalization was "huge"—a highly evident, positive change occurring since school redesign. A small-school leader within a redesigned campus remarked, "The main thing is the relationships. I've seen relationships develop. I thought I'd never see that. The kids feel very comfortable with the teachers." For adults in the schools, building relationships with students helped to change their daily work, making teaching a more relevant and rewarding effort. "You see them every day, and you build a relationship with them," said one teacher. "It goes beyond passing a class or failing a class. At least for me, it makes teaching a lot more enthusiastic."

Students at these three schools also spoke of adult-student personalization as what they liked best about the redesign to small schools. Students mentioned several results of these new relationships, including receiving more individual attention from teachers. One student noted that "I can ask for help, and they can take time to help students with what they need help with. Teachers actually sit down and talk to you and see if you are failing." Students felt their teachers knew their strengths and weaknesses as students; as one commented, "I really like with small schools how my teachers know me on a one-on-one basis, and they know what I'm good at and what I'm not good at." In addition, students remarked that the personal relationship shared with adults in the schools creates an atmosphere of support and comfort. "The teachers, they understand us. They'll speak our language. They are just like another student, but they are helping us to succeed." The transformative effect of the redesign process on student-teacher relationships within one school, Sullivan, is highlighted in Exhibit 9.

Exhibit 9. Personalization at Sullivan

Sullivan is located in a Western city, serving predominantly African-American and Hispanic students from a variety of surrounding neighborhoods. With some students from nearby homes and other students from a neighborhood referred to as "the ghetto" by Sullivan staff and students, Sullivan creates a community inside the school walls through a focus on personalization among and between adults and students. School leaders, teachers, and students alike commented on the powerful change that personalization made in the school over the past year.

One small-school leader discussed how knowing students on a personal level made him aware of their special needs and provided him with ideas about where additional resources were needed. He described this new way of thinking as possibly "the legacy of the small-school concept." Another school leader affirmed, "It's hard for a student to slip by because of our small size." All of the leaders recognized the benefits that these changes were bringing to the school, faculty, students, and community. According to one teacher, "The students feel loved, accepted, and

challenged." Said another, "Developing relationships where students come to you with personal issues and acknowledge that 'you make a difference in my life'" is made possible by the personalized school environment.

In focus groups, students consistently highlighted their personalized relationships with teachers as the defining factor positively affecting their high school experience. Students described their teachers as "supportive; they try to help us after school," and said, "We know [the teachers] on a personal level. They understand where we're coming from." One student put it this way:

> [Teachers] motivate you and push you to work harder. Our teachers are, like, "We want you to make it." They put their effort and trust in us, like we are their own. They want to see us succeed. As a minority, they make us feel valuable.

As the schools progressed in their redesign efforts, one issue that showed improvement was the crossover of teachers and students between small schools. With less crossover, students and teachers strengthened relationships within their own small school but, consequently, had less interaction with students and teachers in other small schools on the campus. Some teachers and students commented on this loss. From a teacher's perspective, "The downside is that I'll know very few of the other students [on the school campus]. I'll know [my small school's] students well and not know any of the other small-school kids really at all." A student lamented, "The only people we see during the day are the people in our small school. They do share the same interests as us, but I don't get to interact with the friends I have outside [my small school]. Even for lunch, we only have lunch with our small school." Acknowledging that students didn't get to know other students and teachers schoolwide and that adult relationships had narrowed to small-school colleagues, however, one teacher still observed that "the advantages [of redesign] far outweigh the disadvantages." If small schools are to become autonomous and emphasize personalization, this shift from quantity to quality of relationships seems a natural consequence.

High Expectations

As teachers and students in redesigned schools build personalized relationships, the next step is to develop as a community of learners and to engage students in rigorous, challenging work. As one student described:

> I think my teachers expect more from me now. They know I can do it, so they're going to make me do it until I can get it right. My teachers know my academic area. They know what I can do

and what I can't do, and they challenge me to do it. And if I can do it, they expect me to do it really, really good. They focus on everybody, but they know you as an individual too.

Although this student felt challenged and supported by her teachers, students in focus groups across the schools we visited expressed inconsistent perspectives about the level of challenge of their school-work. Teachers were also mixed regarding expectations, some saying they hold students to high standards and others admitting that teachers at their school don't have high expectations for students. According to one teacher, "We don't have consistency about how staff are delivering things." Although survey results as depicted in Figure 5 showed significant progress in the implementation of high expectations ($p < .001$), qualitative data demonstrated that school staff were still in early stages of grappling with a number of related challenges.

One important challenge is that raising expectations sometimes represents a paradigm shift on the part of teachers. One teacher felt the faculty at her school "allow students to do the barest minimum, and it's not that we don't want them to do more, it's just that we've gotten [the same low level of student work] time and again, and I think we are worried that if we expect more they will fail." At another school, the campus leader reported finding from a survey that "teachers and students did not have the same expectations," since 80% of the students expected to go to college, but only 30% of the teachers expected the students they taught to go on to college.

Another challenge in creating high expectations is providing appropriate levels of support and challenge to the full spectrum of students: high achievers, those working at grade level, and students with low skills or motivation. Accomplishing this without tracking students was a goal these redesigned schools shared, although they used very different approaches to address it. All four redesigned schools we visited began with some level of offerings that provided additional opportunities for student challenge, including International Baccalaureate (IB) programs, Advanced Placement (AP) classes, and honors classes. At one school, such offerings were seen as a catalyst for raising expectations generally at the school and for helping to improve standards for all teachers. Rather than isolating the high-performing students, the faculty at this school saw their IB program as an opportunity for students in all SLCs to participate in more rigorous and challenging curriculum, and they sought to train as many teachers as possible in IB curriculum and methods. As a school leader stated:

My vision is to meet the needs of as many kids as possible here. We have a diverse population and a strong IB program. It's not its own SLC, but it draws students from all SLCs...We want all students to be a part of IB.

Another school chose a different strategy and made deliberate efforts to serve low-achieving students by reducing the separation of high-achieving students into honors course offerings and instead creating a broader mixture of student skills and engagement levels within classes. This structural change, however, was only the first step to providing appropriate challenge and supports for all students. One teacher described the situation this way:

> It seems like we're moving away from having a class that's an honors class and then a middle-of-the-road class and then a lower class. They've kind of mixed those [ability levels] together. And that's good to have if you want everyone to be on the same playing field. But the problem is that if you're all in the same class together, the people who aren't as good at, say, math, are going to need a lot of help.

To support teachers in this difficult challenge, this school has made a year-long commitment to differentiated instruction within its professional development activities. Differentiated instruction is the practice of effectively engaging and challenging students of mixed abilities within the same classroom. This is no small feat, since students come to class with varied skills and abilities based on their academic histories. In addition, high schools have traditionally grouped students in high school classes by achievement levels, making it easier for teachers to move all students through the curriculum on the same schedule. Engaging and challenging all students in a mixed-ability class effectively on an ongoing basis requires intensive professional development so that teachers can learn, often for the first time, how to tailor lessons, discussions, and assignments appropriately within a given class period. Exhibit 10 provides a further description of professional development strategies designed to support differentiated instruction at Von Humboldt.

Exhibit 10. Differentiated Instruction at Von Humboldt

Located in the suburbs of a major Midwestern city, Von Humboldt looks like a typical mid-sized American high school. The campus, which has been divided into five small schools, serves 1,300 students, most of whom are white and middle-class.

The redesign to small schools effectively ended student tracking, causing most of the classes at Von Humboldt to become heterogeneous. The wide range of abilities within each class has created a new challenge for Von Humboldt's teachers: how to improve the skills of lower-

performing students without "dumbing down" the classes for the more advanced students. Teaching mixed-ability classrooms, known as differentiated instruction, is a focus of professional development for the school, as is literacy instruction.

In 2003–04, a grantee representative who works for the district helped develop and establish Collaborative Assessment of Student Learning (CASL)[a] workshops. In CASL, teachers describe lessons from their repertoire, which are then constructively critiqued by other teachers to identify best methods to engage and challenge all students. Some teachers noted feeling vulnerable during these sessions but explained that they have experienced improvements in their teaching and seen better results for their students. "It gets us thinking about what we can do as teachers," one teacher explained. "It met with a lot of resistance from teachers at first, [but] I liked it...Teachers have been doing this [type of analysis] all along, but this is a lot more detailed." Teachers commented on how difficult it has been to teach such heterogeneous groups but said they were determined to find creative solutions: being more hands-on and giving extra help to slower students, trying more group and paired work, and other, more specific techniques. For example, several teachers mentioned using tic-tac-toe-like matrices, or "choice boards," in which students pick different activities from three levels on the matrix according to their level of proficiency.

As one teacher put it, differentiated instruction is "the new buzzword" at the school. One small-school leader predicted that the technique is here to stay: all teachers are trying it to some degree so far, and "We'll continue to work with those people who aren't doing differentiated instruction well. It's going to be a transition... [but] in the long run this differentiated instruction is going to be great for all the kids."

[a] This program is distinct from the organization CASL (Center on Accelerating Student Learning), designed to accelerate learning for students with disabilities in the early grades.

Other strategies used by redesigned schools to raise academic expectations included establishing a schoolwide emphasis on setting clear expectations for students and focusing staff development on instructional strategies. At one school, teachers chose to eliminate "D" grades to remove the option for students to put in a minimal effort and still pass. The campus leader explained how this change was accompanied by more intense monitoring and support for improved student performance: "Our grades were dismal the first semester because there were no Ds. I evaluated the grades, and then we put 60 kids on contract and they had to check in regularly. Other kids were put on a monitoring system, and the grades became greatly improved."

Teachers and students at the redesigned schools also suggested that longer class periods and increased personalization contributed to holding students to high expectations. One teacher felt that "meeting every other day means that the expectation of every meeting is higher." He added, "I really do feel that that type of scheduling [longer class periods] allows me to really get to know the students in a much more deep and meaningful way."

The primary goal of raising expectations and offering challenging courses is to improve students' readiness for college. All four redesigned schools offered programs and supports designed to help their students prepare for and apply to college. One student reported that "I think they prepare me to get into college. They teach you. When you write an essay, they'll say, 'Well, this is what the colleges want.' They'll tell me what's wrong and how to prepare better." College preparation efforts at the various schools included offering between-semester mini-courses that took students to local colleges, partnering with a local foundation that provides scholarships to qualifying students, and scheduling AVID courses (Advancement Via Individual Determination). In AVID, students are coached by college tutors and work in collaborative groups using a curriculum focused on reading, writing, math, and study skills.

Teacher Professional Community

As schools have worked to strengthen the relationships between students and teachers, redesign initiatives have also helped schools in their efforts to build stronger teacher professional communities. Teachers reported talking and working together more often, and in deeper ways, than before the redesign began. As one teacher described, "The professional community has changed. Teachers are connecting…and they're looking to each other to think about what could we do to teach a class together?"

In the year 2 evaluation report (AIR/SRI, 2004), teachers in their first year of redesign reported the ways they planned to build collaborative professional communities. In 2003–04, there was evidence from site visits of progress in this regard, since teachers at all four schools we visited reported increasing positive relations among their colleagues. They commented that "it's easier to share ideas with other teachers" since redesign and that "teachers are talking to each other a lot more now than they used to."

This is a strong accomplishment, given that, in at least three of the schools, not all teachers were assigned to the small school that was their first choice. Although teacher assignments at each school considered school preference, some were made deliberately to balance the content needs in the SLCs and avoid inequitable distribution of teacher skills. As schools plan their redesign process, one design choice they will face is how to make teacher assignments that address both individual preferences and the content needs of the SLCs.

Strong relationships among colleagues are an important precursor to deeper aspects of professional community, such as teachers' openly discussing their planning and teaching activities with colleagues and

beginning to work collaboratively. Although the progress in collaboration shown in the survey results in Figure 5 is not yet significant, site visit data suggest that teachers in the redesigned schools were beginning to work toward building this collaborative network and were succeeding to different extents.[14] Most consistently, at three of the four schools, some teachers reported co-teaching classes or units, though co-teaching was still intermittent at two of these schools. Exhibit 11 shows how teachers at Logan were making this transition from developing stronger relationships to more consistent collaborative work.

Exhibit 11. Teacher Professional Community at Logan

Logan Senior High School is situated in a square, three-story brick building. Each of its four small learning communities is located in a separate hallway of the building and has its own wall color and banners. The first year of the conversion, the SLCs served only 10th- and 11th-grade students. In their second year, the SLCs served students in grades 9–12, and teachers were moved to their respective SLC hallways.

The teacher professional community at Logan was invigorated with this physical rearrangement of staff. The campus school leader explained, "We've [physically] brought as many people together as we can. Having teachers closer together is better. They're more accessible to each other, and they talk to each other more often." A teacher added that this rearrangement made a difference in her SLC community. "I like having all of the [SLC] teachers in that corner. It feels like more of a home...There was a lot of grumbling about moving last year, but it's working for the most part. It was nice to be right next door to my team teacher."

Grant support (from the Bill & Melinda Gates Foundation and others) was also helpful in building this collaborative community. As one teacher put it, making collaboration and team teaching possible "comes down to time. Where do you find the time to do this stuff?" Grant funding provided pay for teachers to meet and plan over the summer. Summer planning time was an essential enabler for the co-teaching partnerships that one SLC established between its English and social studies teachers. Students had these two classes scheduled back to back, with the co-teachers coordinating class content and assignments. One teacher described an example of a co-teaching activity: "The idea is that we're really going to work together to get [students] to be able to write a good research paper in history. And I think that because we're working together, we're meeting the needs of students because we can both talk and attack it together." Because of the success of this co-teaching method, it is now serving as a model for the other Logan SLCs. The campus leader stated that "our plan for next year is to have English and social studies taught [this way] in every [small learning] community."

Beyond co-teaching, other collaborative activities included sending teachers out to training and having them present what they learned to other staff, distributing leadership roles among teachers, creating a Critical Friends Group with trained facilitators, and meeting regularly to plan and solve problems.

Most teachers we spoke with were energized by the new cross-disciplinary connections that resulted from collaboration within their SLCs. However, this collaboration was accomplished by weakening or dissolving traditional discipline-based departments. It was an exciting change for most teachers, yet it created an unanticipated challenge. Cross-discipline collaboration was concentrated among English and social studies instructors, often leaving out those who taught math and science. In fact, Logan, which had the most formalized co-teaching activity of the four schools, included only pairings of English and social studies teachers. A math teacher commented, "The unfortunate fallout [of the physical relocation] is breaking up the departments. I'm not [physically] close to my department anymore. I have to run down the hall and around the corner if I need to share equipment."

This desire for content-centered collaboration and feedback on the part of math and science teachers is consistent with the experience of new schools. In these schools, too, cross-discipline integration was seen as more natural across social studies and English (often combined into humanities courses), while math and science teachers found it more difficult to marry their subjects into joint courses that covered all required standards. In addition, math and science teachers reported more often that they missed being able to share equipment, curriculum, and teaching strategies with those in their own discipline.

Additional Challenges for Redesigned Schools

As in new schools, the growing sense of positive relationships in the redesigned schools is a source of encouragement for school staff and students. Evolution is slow, however, as these comprehensive schools continue the process of redesign into small schools or SLCs and struggle to create a new high school experience for students and adults. Scheduling remains quite difficult, as school leaders work to provide a full complement of classes and subjects with the small number of teachers in any given SLC. Adding to the scheduling complexity are multiple bell schedules, programs that cross SLCs (such as AP, sports, and band), scheduling classes to facilitate co-teaching, and working within buildings that were never designed for multiple schools. An additional year of experience managing schedules has led to progress, but scheduling still remains a difficult issue as the SLCs continue to develop autonomy.

Connected to the need for facilities and staff is the strain of working in schools that are going through redesign. In addition to external mandates like staff layoffs and increasing class sizes, staff at these schools described redesign-related burdens like additional committee and leadership work, advisories, and difficult class schedules, such as having four class preparations each day. Some school leaders felt they had inadequate resources to implement the design changes they planned; said one school leader, "We never got the support we needed to be small schools…I don't have the help I need." Both teachers and school leaders acknowledged that redesign means more work and more responsibilities—particularly unwelcome in schools where few staff had input into the decision to redesign. Although teachers in redesigned schools did not report as much exhaustion in the second year as in the first, the job was still, in the words of one teacher, "pretty overwhelming."

As redesign continues and SLCs increase in autonomy, another ongoing challenge is the evolution of leadership structures within redesigned schools. One school has moved from one SLC leader to two co-leaders so that, as a small-school leader put it, "nobody feels like the burden of carrying it through is on one shoulder." Another school planned to transition from single SLC leaders to leadership teams, with the expectation that "leadership will be more distributed within an SLC," according to one small-school leader. Given that some new schools were choosing to recentralize administration to alleviate the burden on teachers, the trend toward distributed leadership within redesigned schools will be an interesting development in the growth of these school professional communities.

Relative Progress of Small Learning Communities within Redesigned School Campuses

Both qualitative and quantitative findings showed that the redesigned schools we visited experienced some successes in beginning to create more personalized teaching and learning environments, raise academic expectations of students, and strengthen their professional communities. In addition to the overall changes in the implementation of effective-school attributes across schools, we also examined changes within individual small schools created through the redesign of comprehensive high schools and found that the pattern of change was by no means uniform.

As Figure 6 shows, most SLCs created through redesign (18 out of 26) exhibited higher levels of implementation of the foundation's effective school attributes in their second year as a collection of SLCs, compared with schoolwide measurements immediately before the redesign. In these schools, students, teachers, and school leaders were encouraged by the changes that redesign had produced in their schools in their first 2 years.

Figure 6. Change in Implementation Index from Planning Year to Second Year of Redesign in Small Learning Communities
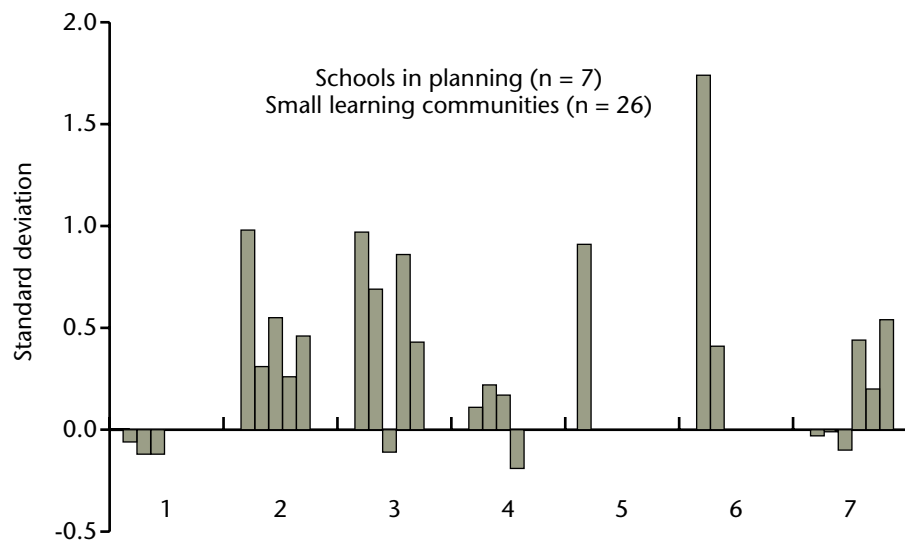
Note: Each small learning community's change score is measured relative to the implementation index of the comprehensive school from which it was created. Thus, the x-axis represents 0 standard deviation, or the implementation level of the comprehensive school prior to redesign.

Still, it is important to note that 8 of the 26 SLCs experienced declines in terms of the effective-school attributes. Considerable variation existed even within a set of small schools created from the same comprehensive high school. We do not yet have a consistent explanation for these variations, but the qualitative data suggest several factors that are relevant in particular school settings.

First, some small schools had existing curricula or programs, whereas others had to devise their programs "from scratch." For example, one school (Western, described in Exhibit 8) opened its SLCs progressively rather than all at once. The SLC that opened first had been a magnet program since 1986. The other two SLCs opened a year later. The SLC that grew out of the existing academy had the benefit of a more fully developed curriculum, as well as a citywide reputation and an additional year of operation as an SLC. For schools that opened SLCs over the course of several years, this strategy offered the opportunity to learn from a pilot SLC but also introduced the possibility of uneven implementation and maturation across the SLCs.

Another factor influencing the relative progress of the SLCs created through a school redesign stems from the method of selecting teachers and students for the SLCs. Some conversion schools had uneven distributions of teachers across SLCs where, for example, all the athletic

coaches taught in one SLC while another SLC ended up with most of the International Baccalaureate students and teachers. Other redesigned schools distributed students in a way that left different SLCs with different teaching challenges: for example, one SLC might have all severely disabled students or a disproportionate number of English learners.

Another influential contributor to unequal progress is that some SLCs received additional financial support from outside organizations, which was not shared schoolwide. At one redesigned site, for example, one SLC received an annual award of $25,000, which was used for professional development and student resources. According to this SLC's leader, "You can really see the extra dollars helping the small school."

Summary

The process of redesigning comprehensive high schools into small learning communities has resulted in improvements for both students and teachers. In the second year of their redesign projects, the SLCs, as a group, made progress in implementing the foundation's effective-school attributes when compared with the comprehensive schools from which they were created. They also produced significantly higher ratings on five of the six attributes examined this year, including high expectations and personalization. Although the attribute of collaboration was not significantly higher than in the comprehensive schools, the qualitative data showed that teachers and school leaders felt there had been a strong improvement in their professional community as a result of the redesign.

A closer examination of the redesigned schools, however, revealed that not all teachers and students had experienced improvements to the same degree. Furthermore, not all SLCs within a given campus performed equally well. Although most SLCs showed some progress in implementation when compared with their original comprehensive schools, and some even did far better, other SLCs did not improve compared with this baseline. This inconsistent performance of SLCs may be related to existing programs or curricula, student and teacher selection, or differences in funding. Although redesigned schools remain far behind new schools in implementation of the effective-school attributes, most SLCs outperformed their original comprehensive schools, and many students, teachers, and school leaders saw reason to be positive about the changes that the first 2 years of redesign had produced in their schools.

Implications for the Initiative[15]

After 3 years of foundation funding, both new and redesigned schools have made strides toward implementing school cultures marked by strong relationships. In new schools, overall measures of implementation of the foundation's effective-school attributes were far above those of the comprehensive schools in our evaluation, and the schools had many of the attributes found in more mature model schools. The relationships within most of these schools were described by both students and adults as motivating and personally enriching and as paving the way for academic achievement.

Although redesigned schools started far behind new schools in implementing the effective-school attributes and have had to work to change existing structures, cultures, and beliefs, they showed gains over their prior state as comprehensive schools, most notably in their implementation of personalized school cultures in which students feel known and supported by their teachers, both academically and personally.

This report has also shown that, after 3 years, many of these school designs were still far from stable. For new schools, progress often dips in the second year, when schools are experiencing rapid growth and, for some, other destabilizing events occur, such as the departure of a school leader or district pressures to increase class size. By their third year, many leaders of new schools were confident that the basics were in place, but most had yet to graduate their first class. Thus, growth and evolution are continuing.

For redesigned schools, 2 years after SLCs were launched, some of the initial logistical issues have been resolved, and general progress was evident, but staff were still grappling with difficult challenges of how to raise expectations for all students and how to develop truly collaborative teacher communities. Many of our respondents agreed that this was an exciting process that was already transforming the lives of students, but that they continued to encounter challenges along the way.

Three years into the development of the schools funded by this initiative, we can draw some implications from the experiences of new and redesigned schools concerning the viability of the initiative and areas where additional focus and resources would be useful.

◆ *There is mounting evidence that the new and redesigned high schools created through the foundation's initiative provide a more positive climate for both students and teachers.* The positive climate of the new schools, in comparison with the climate in comprehensive schools preparing for redesign, has been documented previously (AIR/SRI, 2004), as well as in this report. Although it seems likely that the schools' size and design are major contributors to this result,

alternative explanations are also plausible. Even though we have controlled statistically for the demographic characteristics of the students in different types of schools, it may well be that new schools tend to attract students from homes that place a higher emphasis on education or that they assemble a more motivated staff than is found in the comprehensive schools. Alternative explanations for the improvement in the climate at the new schools created through redesign are much harder to generate. In a redesigned school, the same teaching staff generally is serving the same student population that attended the comprehensive high school 2 years earlier. The increased expectations for all students, greater personalization, and atmosphere based on respect and responsibility reported by students and teachers after redesign suggest that the initiative is indeed having a positive influence on school climate.

◆ ***Despite the many challenges involved in school redesign, the foundation should continue to support these efforts.*** The positive effects reported here for school climate are based on a relatively small number of redesign efforts, and the foundation will want to see positive effects for student outcomes, such as achievement scores and graduation, as well. As the foundation awaits the accumulation of more evidence on these issues, the positive changes in relationships within schools that have undergone redesign justify some cautious optimism despite the difficulties and setbacks associated with such efforts (AIR/SRI, 2004; Fouts & Associates, 2005). Nevertheless, implementation progress of redesigned schools remains far below that of new schools after receipt of funding for the same length of time. More experience is needed to judge the ultimate promise of this type of reform.

◆ ***School redesigns are probably best done all at once rather than in stages.*** The data reported here on school redesign are consistent with those reported by Fouts & Associates (2005) for a larger sample of school redesign efforts in Washington state. Whereas leaders of new schools make a strong case for opening a school with just one or two grades to make the school-opening process more manageable, the downsides of a gradual school redesign appear to outweigh the advantages. The difference is that schools undergoing redesign already have a full complement of grades and students; to continue serving the students not assigned to their first small learning community, they need to operate two systems and cultures simultaneously. In addition, equity of offerings across small learning communities is harder to achieve when they are rolled out incrementally.

◆ ***Schools should develop multiple partnerships early in their design pro-
cess as an important supplement to internal capacity.*** To carry out the
vision of this initiative, schools and teachers are going far beyond
the traditional notion of an academic education to help students,
in the words of one teacher, not just get through their classes but
"get through their life." Successful schools are recognizing that
close partnerships with outside organizations can be an essential
enabler in realizing this goal. Although the intermediary organiza-
tions funded through this initiative offer many supports (AIR/SRI,
2004), few offer the full range of services needed to carry out all
school functions. Some schools are benefiting from additional part-
nerships that are targeted to a particular curricular need, like a bio-
tech company that sponsors equipment for a specialized course
that meets the school's theme. Other partners are deeply integrated
into the school design, such as partnerships with teaching colleges
or with counselors who provide personal social services to students.
Schools that negotiated multiple and substantial partnerships early
in their development are finding significant relief from at least some
of the capacity issues that are so frequently experienced by teachers
in new schools with small teaching staffs.

◆ ***The foundation and its grantees should stress recruiting, developing,
and retaining strong school leaders.*** School leadership makes a big
difference in reform efforts, and attention to the selection and
development of school leaders can have large payoffs. In addition,
leadership of innovative schools demands a skill set different from
that needed for more traditional administrative roles. School lead-
ers are needed who can launch a new infrastructure and who can
provide ongoing leadership to a focused organization operating in a
district context that is likely to include structures and requirements
at odds with their school's design. After 3 years, it is becoming
increasingly evident that turnover among school leaders is common,
making leadership development and recruitment an ongoing issue.
Some grantees are focusing strongly on leadership preparation,
principal internships, and networking among the principals. These
activities deserve encouragement. Further, the foundation may want
to consider hosting some professional development activities for its
school leaders and engaging effective school leaders in providing
support for a network of colleagues. Because of the foundation's
prestige, its sponsorship and recognition of school leaders can be
an inducement for these very busy school leaders to exercise leader-
ship in the initiative more broadly.

♦ ***The foundation should consider providing special supports for mathematics and science teachers.*** In both new and redesigned schools, mathematics and science teachers are finding a fit with collaborative professional cultures more difficult. The subject matter standards for their disciplines and, in the case of science, the special equipment requirements make it more difficult for them than for other teachers to collaborate with teachers of other subjects on thematic projects. They are also more likely than other teachers to report missing interactions with other teachers in their same subject area. Overall, in schools funded by this initiative, 3 years of experience has generated more successful models of cross-subject collaboration in the humanities than in mathematics and science. In fact, many examples of fruitful curriculum and instruction combining mathematics and science (and even mathematics and social studies) exist, many funded by the National Science Foundation. Either the foundation or its grantees may want to consider providing technical assistance and professional development specifically for math and science teachers working in small innovative high schools.

♦ ***The foundation and its grantees should continue active support of the initiative's schools in the face of district and state actions that undercut fundamental components of their designs.*** Most school districts are experiencing difficult financial times, leading to difficult trade-offs for multiple competing programs. In districts that lack strong support for small schools or charters, the likelihood of sustainability for schools and reform efforts is limited. Both new and redesigned schools must be considered fragile entities well beyond their first 3 years of existence. A critical role for the foundation and its grantees is to garner support for the incubation of these schools. Changes in funding formulas that force drastic increases in class size or that require schools to lay off a large portion of their teaching staff and to replace them with teachers who do not share the school's vision can easily destroy the special quality of these schools. Advocacy for removing policies that differentially hamper new independent schools is one important activity: for example, several schools reported that their districts prohibited them from posting openings early enough to recruit the kind of teachers they need. In addition to supporting their schools in negotiating more supportive district policies, some grantees are working to persuade districts of the value of small schools more broadly, making the case that small schools increase attendance and therefore district revenue. The foundation and its grantees may want to focus more of their energy and resources on protecting the schools that have already been started, even if it means starting fewer new schools.

◆ ***Grant decisions made under this initiative should consider plans for school sustainability.*** Most schools in this program receive direct funding and support for their first 3 years. Although both new and redesigned schools typically make progress in that time, the extremely complex processes of institution building and school transformation take more than 3 years to complete, as demonstrated by the still-evolving status of schools whose foundation funding has ended. There is every indication that the need for funding and support for change is ongoing. Strategies for continued support for reform—potentially by providing funds for involving more mature schools in mentoring and supporting staff for new schools—should be explored. In addition, as the foundation moves toward focusing its education investments in specific districts or states, it can catalyze local partnerships that will support reforming schools over the longer term.

This report has focused on the implementation of whole-school designs marked by close relationships between and among students and adults. The next two reports in this series will focus on the relevance and rigor of the academic experiences in these schools, as well as on students' early outcomes. Together, these reports will provide a relatively comprehensive picture of what is occurring in the schools during the first 3 years of the Bill & Melinda Gates Foundation national high school initiative— examining not only their establishment of close relationships but also their efforts to institute effective teaching and learning and to produce positive student outcomes.

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Endnotes

Executive Summary Endnotes

[1] Specifically, the effective-school attributes are: common focus, high expectations, personalization, respect and responsibility, time to collaborate, performance-based promotion, and use of technology as a tool.

[2] Three upcoming reports in this series deal with the nature of teaching in these innovative high schools, classroom learning, and achievement test scores relative to other schools in their districts.

[3] The views and recommendations expressed in this report are those of the authors and do not necessarily reflect the opinions or policies of the Bill & Melinda Gates Foundation.

Main Body Endnotes

[1] The dramatically higher number of schools surveyed in 2004 includes the multiple small schools that were produced from the redesign of comprehensive schools surveyed in their planning state in 2002.

[2] We did not include the performance-based promotion attribute in creating the implementation index or in our analyses because the measure we have for this particular attribute was unreliable and poorly correlated with the other six attributes or the overall implementation index.

[3] The school risk index is a measure based on the percentage of minority students and percentage of students eligible for free or reduced-price lunch in the school.

[4] The lack of statistical significance may be attributable partly to the small number of model schools in our sample and hence a lack of statistical power for the comparisons.

[5] We pooled data from first-year new schools with adequate response rates from all three years of survey data collection; that is, we combined the 2002 data for 7 new schools that opened in 2002, 2003 data for 13 new schools that opened in 2003, and 2004 data for 7 new schools that opened in 2004 for our analyses. Similarly, we pooled comprehensive schools planning to redesign with adequate response rates from all three survey years (8 surveyed in 2002, 2 surveyed in 2003, and 4 surveyed in 2004) and further combined the data from these 14 comprehensive schools with data from 3 comparison schools surveyed in 2004 to form the group of comprehensive high schools. Data for the 5 model schools were from the 2002 survey. Of the 49 schools for which we have survey data with adequate response rates, 3 new schools and 2 comprehensive schools planning to redesign were missing data on important measures and were therefore excluded from our analyses. The final analytic sample for the cross-school-type comparisons included 24 first-year new schools, 5 model schools, and 15 comprehensive high schools.

[6] In this report, names of all schools are pseudonyms.

[7] These attributes in new high schools are described extensively in previous years' evaluation reports (AIR/SRI, 2003b, 2004), so we will sketch them only briefly here.

[8] Comprehensive schools are not shown on this chart; however, in Figure 2 they are seen to score far below the mean for all measures reported here.

[9] Based on paired-samples t-tests, the cross-year change in new schools was statistically significant on the overall level of implementation ($p < .01$), common focus ($p < .01$), and time to collaborate ($p < .05$), and marginally significant on personalization, high expectations, and respect and responsibility ($p < .10$).

[10] In Borman's study, effects were reported across the sample of schools in each year. One possible explanation for stronger performance beginning about year 5 is that by that time most schools in which the reform did not succeed had dropped out of the study, and in the remaining schools the reform had taken root.

[11] This count includes two schools for which first-year survey response rates were too low to include in formal analysis but that had adequate response rates in the next two years; in each case, the mean score based on the year 1 surveys that were returned was lower than the school's second-year implementation index.

[12] In this report, the term "small learning community" (or SLC) encompasses both autonomous small schools with separate identities and programs within a larger school that have a distinct identity but may lack autonomy in terms of school leadership, policy, and budget (see the sidebar on SLCs). When describing a school redesign, we have attempted to use the terminology favored by the particular school, but we have grouped small schools and small learning communities together for purposes of analysis. As sample sizes grow, it will become easier to differentiate and compare these two design strategies.

[13] Personalization was not mentioned as a primary outcome of the redesign process at the fourth school, although it was a goal of the school's redesign effort. Because of a staged redesign at this school, two of the three SLCs were midway through their first year, and personalization may not yet have been as strong as in the schools with more mature redesign efforts.

[14] It is possible that collaboration scores did not significantly increase between surveys before and after redesign because teachers and administrators participated in collaboration and design work during the planning process. Consistent with this explanation, collaboration had the highest implementation score of the six attributes at the planning stage.

[15] The views and recommendations expressed in this report are those of the authors and do not necessarily reflect the opinions or policies of the Bill & Melinda Gates Foundation.

Technical Appendix

I. Sampling and Data Collection

Surveys

The quantitative data analyzed for this report came from surveys administered to students, teachers, and school leaders in 2002, 2003, and 2004. Exhibit A-1 lists the numbers of schools surveyed by school type, year of survey administration, and response rate category. The analytic samples for this report included only schools with adequate response rates. To be considered adequate, both teacher and student response rates had to be

Exhibit A-1. Schools Surveyed, by School Type, Year of Survey Administration, and Response Rate Category

School type	Met response rate criteria	Did not meet response rate criteria	Total
	2002		
Model	5	0	5
New	7	2	9
Planning	8	1	9
Redesigned	0	3	3
Comparison	0	0	0
Total	20	6	26
	2003		
Model	0	0	0
New	21	0	21
Planning	2	1	3
Redesigned	0	0	0
Comparison	0	0	0
Total	23	1	24
	2004		
Model	0	0	0
New	27	1	28
Planning	4	1	5
Redesigned	26	1	27
Comparison	3	2	5
Total	60	5	65

Note: The large increase in the number of schools surveyed from 2003 to 2004 was due largely to the fact that each school in planning in 2002 had broken into multiple small schools by 2004.

at or above 50%, with at least one of the two at or above 60%, for all types of schools except comparison schools. The corresponding criteria for comparison schools were 40% and 50%, respectively.

Site Visits

In 2003–04, site visits were conducted in 30 of the schools in the survey sample. Twenty-two new, 4 schools planning for redesign, and 4 redesigned school campuses were visited. Of the new schools, 8 schools that opened in fall 2001 were visited for the third time, 7 schools that opened in fall 2002 were visited for the second time, and 7 newly opened schools were visited for the first time. Initial visits were made to the planning schools, and redesigned schools were visited for the third time.

Two-person teams visited each school over a period of 2 to 4 days, as needed. School site visits included interviews with school principals and other leaders considered key to the success of reform activities, focus groups with two groups of students and (in selected schools) with two groups of parents, interviews with five teachers, and observations of five classrooms (where possible, those of teachers who were interviewed). Some school data collection instruments (e.g., interview protocols) were tailored to the circumstances of the various school types. Interviews and focus groups were audiotaped to support the completeness and accuracy of the data records.

II. Teacher and Student Surveys: Measures and Analyses

Dependent Measures

The main purpose of this report is to examine the effects of the foundation's initiative on the development of desired organizational attributes in foundation-supported high schools. Specifically, we assessed the initiative's effects on the foundation's effective-school attributes and constructed an index of the overall level of implementation. Using factor analyses, we constructed a set of scales that were mapped onto six key attributes of effective high schools: common focus, high expectations, personalization, collaboration, respect and responsibility, and technology as a tool.[1] The relevant survey items comprising each of the scales and the reliabilities of the scales in each survey year are listed in Exhibit A-2. On the basis of these scales, we created measures of the six effective-school attributes and an index of the overall level of implementation, the *implementation index*, as follows:

- Aggregate the teacher scales and student scales comprising the six attributes to the school level.
- Standardize the aggregated teacher and student scales.
- For each of the six attributes, create an attribute measure as the mean of the standardized teacher and student scales comprising the attribute.
- Standardize the six attribute measures.
- Create the implementation index as the mean of the six standardized attribute measures.
- Standardize the implementation index.

For analyses comparing the implementation index and school attributes between first-year new schools, model schools, and comprehensive high schools (shown in Figure 1 of the report), the original measures were standardized on the basis of the analytic sample, which included 24 first-year schools pooled from all three survey years, 5 model schools, and 15 comprehensive high schools pooled from the three survey years (see main body endnote 5 for further details). For the remainder of the analyses, the original measures were standardized on the basis of the full sample—that is, all schools with data from each year the school was surveyed.

All standardized measures had a mean of 0 and a standard deviation of 1, with higher values indicating stronger presence of the effective-school attributes in the school.

Exhibit A-2. Survey Items Comprising the Scales Used to Measure Effective-School Attributes and Alpha Coefficients for Each Scale, by Year and Respondent

Scale	Survey Items	Reliability (α)		
		2002	2003	2004
Common Focus				
Common focus	How much do you agree: · Teachers have different visions for student learning · Teachers share beliefs about what the central mission of the school should be · Teachers are committed to developing strong relationships with students · Teachers are committed to developing partnerships with parent(s)/guardian(s) for student learning · Parents and community members share vision for student learning	Teacher (.77)	Teacher (.81)	Teacher (.83)
Instructional coherence	How much agree: · Support programs are linked to curriculum, instruction, and assessments · Professional development supports the implementation of a set of common curricula, instructional strategies, and assessments · Curricula are coordinated to avoid repeating subject matter with students as they move from grade to grade · Familiar with curricula and instructional strategies used by colleagues who are also teaching my students in subject areas other than my own · Teachers have adequate opportunity to meet with one another	Teacher (.67)	Teacher (.81)	Teacher (.75)
High Expectations				
High expectations	How much agree: Most teachers · Set high standards for teaching · Set high standards for students' learning · Make expectations for meeting instructional goals clear to students · Carefully track students' academic progress	Teacher (.89)	Teacher (.90)	Teacher (.88)
High expectations	How much agree: Teachers at school · Believe all students can do well · Have given up on some students · Care only about smart students · Expect very little from students · Work hard to make sure all students are learning	Student (.71)	Student (.76)	Student (.73)

Exhibit A-2. Survey Items Comprising the Scales Used to Measure Effective-School Attributes and Alpha Coefficients for Each Scale, by Year and Respondent—Continued

Scale	Survey Items	Reliability (α)		
		2002	2003	2004
Personalization				
Personalization-social	% of students for whom you know: · Their first and last names · Their academic aspirations · Their academic background prior to this year · Their home life · Names of person/people with whom they live · Who their friends are · Their cultural and linguistic backgrounds	Teacher (.93)	Teacher (.93)	Teacher (.93)
Personalization-academic	Extent to which you help students with academic difficulties by: · Diagnosing problems the students are having · Determining how to match school resources to student needs · Gathering info to help understand students' difficulties · Helping students learn how to overcome their difficulties in ways that compensate for different learning disabilities	Teacher (.88)	Teacher (.89)	Teacher (.88)
Personalization-school action	Extent to which your school provides following help to students with academic difficulties: · Extra attention from you · Extra help from other staff member during regular school day, week, or year · Extra help from school staff outside regular school day, week, or year · Parent-teacher meetings to discuss what the school and the student's parent(s)/guardian(s) can do to help · Referrals to community organizations for assistance · Extra help from other students	Teacher (.82)	Teacher (.85)	Teacher (.81)
Personalization	How many adults in your school: · Willing to give extra help with your schoolwork if needed · Willing to help you with a personal problem · Really care about how well you are doing in school · Have helped you think about whether you are meeting the requirements for graduation · Have helped you think about what you need to do to prepare for college or a career	Student (.84)	Student (.86)	Student (.84)

Exhibit A-2. Survey Items Comprising the Scales Used to Measure Effective-School Attributes and Alpha Coefficients for Each Scale, by Year and Respondent—Continued

Scale	Survey Items	Reliability (α)		
		2002	2003	2004
Collaboration				
Time to collaborate	How often have you engaged in: · Observing other teachers while they teach · Being observed by other teachers while you teach · Receiving feedback from other teachers based on their observations of your teaching · Providing feedback to other teachers based on your observations of their teaching · Coaching or mentoring other teachers or staff in your school · Co-teaching with other teachers · Diagnosing individual students' learning with other teachers	Teacher (.80)	Teacher (.81)	Teacher (.81)
Reflective professional dialogue	How often have you met with other teachers to discuss: · The goals of this school · The structure of the school day · Development of new curricula or modification of existing curricula · Teaching practices or instructional issues · General classroom administration and management	Teacher (.87)	Teacher (.86)	Teacher (.87)
Parent involvement	How often have you: · Involved parents/guardians in setting up particular learning objectives for student · Involved parents/guardians in judging student work · Provided parents/guardians with exemplars of excellent student work to demonstrate standards for good performance · Involved parents/guardians as mentors for individual students or groups of students	Teacher (.79)	Teacher (.85)	Teacher (.81)
Community resources	How often have you: · Consulted community members to better understand your students How often in your selected instructional period: · Had a guest speaker from the school's community · Discussed different cultures in your community · Took students to visit places or organizations in the community	Teacher (.59)	Teacher (.53)	Teacher (.62)

Exhibit A-2. Survey Items Comprising the Scales Used to Measure Effective-School Attributes and Alpha Coefficients for Each Scale, by Year and Respondent—Continued

Scale	Survey Items	Reliability (α)		
		2002	2003	2004
Respect and Responsibility				
Respect and responsibility	How much do you agree: · Teachers feel good about parents'/guardians' support of their work · Students treat one another with respect · Relationship between students and teachers is based on mutual trust and respect · Students get teased if they take academics seriously · Student success/failure is due to factors beyond teachers' control · I can usually get through to even the most difficult students · It is the responsibility of teachers to keep students from dropping out · Teaching makes a difference in students' lives	Teacher (.73)	Teacher (.76)	Teacher (.74)
Respect and responsibility	How much agree: · Many students in this school don't respect one another · There are groups of students in this school who don't get along How many students: · Feel it's OK to make racist or sexist remarks · Feel it's OK to cheat · Feel it's OK to get into physical fights · Feel it's OK to steal things from other students · Feel it's OK to destroy or steal school property	Student (.84)	Student (.86)	Student (.82)
Collegiality	How much agree: · Teachers really don't support each other or work together · Teachers at this school trust and respect one another · Teachers, administrators, and other staff at this school model responsible behavior for students to see	Teacher (.79)	Teacher (.76)	Teacher (.76)
School climate safe	How often have you felt unsafe: · In your classes · In hallways, stairs, and bathrooms · Immediately outside the school	Teacher (.87)	Teacher (.94)	Teacher (.90)
School climate safe	How often have you felt unsafe: · In your classes · In hallways, stairs, and bathrooms · Immediately outside the school	Student (.88)	Student (.85)	Student (.86)
Orderly climate	How often has this occurred in school: · Fighting · Destroying property · Verbal bullying · Physical bullying · Cheating · Theft	Student (.91)	Student (.93)	Student (.92)

Exhibit A-2. Survey Items Comprising the Scales Used to Measure Effective-School Attributes and Alpha Coefficients for Each Scale, by Year and Respondent—Continued

Scale	Survey Items	Reliability (α)		
		2002	2003	2004
Technology as a Tool				
Technology as a tool	How often do your students use technology for: · Expressing themselves in writing · Communicating electronically about academic subjects · Exploring ideas and information · Analyzing information · Presenting information to an audience · Improving computer skills	Teacher (.90)	Teacher (.90)	Teacher (.90)

Independent Measures

◆ *School type (MODEL, LARGE).* School type was represented by two dummy variables: MODEL (1 = yes, 0 = no), LARGE (1 = yes, 0 = no), with new schools being the reference group. Large high schools included both comprehensive schools planning for redesign and comparison schools.

◆ *Risk index (ZRISK).* The school risk index was a composite measure based on the following school demographic characteristics: percentage of students eligible for free or reduced-price lunch and percentage of minority students (African-Americans, Hispanics, and Native Americans). Both measures were standardized in the same way as measures of the implementation index and school attributes and then averaged to create the risk index. The risk index was also standardized such that it had a mean of 0 and a standard deviation of 1. Higher values of the risk index are associated with more risk-related student characteristics in schools.

Analytic Methods

We used multiple-regression analyses to compare the effective-school attributes and the overall level of implementation across three types of schools: first-year new schools, model schools, and large high schools, controlling for the school risk index. The regression model was specified as follows:

$$Y = B0 + B1*(MODEL) + B2*(LARGE) + B3*(ZRISK) + r$$

The regression coefficients B1 and B2 represent, respectively, the difference between model schools and first-year new schools and the difference between large high schools and first-year new schools in a given school attribute or the implementation index, controlling for the school risk index.

III. Site Visit Data: Coding and Analyses

Data Coding

After returning from visits to schools, site visitors organized the data they had collected into data capture forms. For each type of interview, there was a form with a set of headings, organizing the data in a structure parallel to the flow of the interview protocol. In addition, a school summary form was used to capture more general or synthetic impressions. Site visitors completed the data capture forms on the basis of their notes, checking interview tapes when appropriate for clarification or to obtain exact wording for quotations. Conventions were used to indicate the source of each piece of information, to designate the speaker's exact words as opposed to paraphrases, and to distinguish between data that came directly from the interview and inferences or clarifications provided by the site visitor. Senior analysts reviewed the data capture forms and requested clarifications and additions as needed.

In preparation for data coding, we developed a manual of codes, definitions, and procedures. Codes were developed for the constructs in the foundation's theory of change and for additional constructs in the conceptual framework. Codes described capacity issues, key school attributes, characteristics of curriculum and instruction, learning outcomes, other student and school outcomes, and many other topic areas. Each of these broad coding categories included codes for subtopics. Codes were designed to allow parsing of data capture forms by topic, so that data on similar topics across interviews could be analyzed as a set. There were 132 codes in all.

Data coding began with test coding, moved on to reliability and validity coding, and concluded with operational coding. After the coding structure used with 2003 data was refined, nine coders were trained to use the new draft coding manual and worked in pairs on a sample set of data capture forms to test the codes. Throughout the test coding process, weekly meetings among the coders and several analysts offered an opportunity for joint review of coding results and discussion of potentially ambiguous codes or other needed revisions to the coding manual.

Once the coding structure was tested and refined, subsets of five or six data capture forms at a time were selected to cover a wide variety of form types and content areas. These data forms were used to conduct reliability and validity trials. The trials were designed to promote common uses of codes across coders and to ensure that segments of text were coded as analysts would expect. Coders coded the text segments individually. The submitted individual coding choices were reviewed by

two senior analysts, who then developed a set of master codes for the main ideas of the paragraph that were negotiated with the coding team. The resulting set of codes, agreed on by coders and analysts, was taken as the standard against which coders' original individual responses were compared to examine the reliability and validity of coding decisions. Agreements and disagreements with the standard codes for each paragraph's main ideas were tallied by code, and agreement was calculated as agreements/(agreements + disagreements). In a meeting, the reasons for any low scores were explored and other outstanding issues were resolved. The coding definitions were then updated to improve clarity where necessary, and the process was repeated with the new set of definitions.

An initial reliability run was conducted to verify that each coder was sufficiently trained for operational coding to begin. During operational coding, the reliability process was repeated several times at 2-week intervals to develop our final sample for reliability and validity. In the cumulative sample from three reliability runs, 80% of codes that were used more than three times in the coding sample had estimated reliabilities ranging from 75% to 100%. Codes below that threshold generally corresponded to concepts that were difficult to separate from related topics in the narratives. For example, issues of common focus among teaching staff were often discussed in the same breath as schoolwide professional development sessions that often included discussions of the school mission and goals. Interrelated constructs like this made coding distinctions challenging. In cases like these, we computed reliability estimates for two interrelated codes together and encouraged analysts to consider using queries of both codes when they conducted analyses on these topics.

Once we moved from reliability to operational coding, weekly meetings continued for the resolution of any new issues that arose. To the extent that these discussions resulted in changes to accepted coding definitions, coders were asked to go back to previously coded documents to implement the changes.

Data Analysis

Many of the analysts of school-level data began their work by reviewing samples of data capture forms for schools in their analysis group. These reviews helped analysts get a more comprehensive view of the school contexts and schoolwide issues.

School-level analysts then queried the ATLAS.ti database to review coded data by topic. In some cases, they used coded data to find examples of issues that surfaced in survey analysis. More often, however, they used

the narrative data to surface and substantiate the most prevalent themes in the coded data and to confirm or disconfirm findings suggested by the survey data. To accomplish these aims, analysts consulted the coded data on each topic, generated an initial set of themes to pursue, and developed matrices and other supporting documents to track whether or not, and in what way, a particular issue was in evidence at each school. To vet and refine the emerging themes, analysts worked in small teams by topic area and iteratively reviewed and discussed data until they reached consensus on the supported themes. A larger team of qualitative and quantitative analysts met weekly to evaluate the qualitative themes and examine the consistency of findings across the qualitative and survey data and to decide on areas that warranted further analysis.

IV. Additional Results from Survey Data

Figure 2 in the report compares average values of the implementation index for first-year new schools, model schools, and comprehensive high schools. Although the implementation of desired schooling attributes in first-year schools as a whole was substantially higher than in the comprehensives, individual new schools had a variety of experiences and levels of success in their first year. Figure A-1 presents the distribution of implementation index values for first-year schools, adjusted for school risk.

Figure A-1. Distribution of First-Year New Schools on the Implementation Index, Adjusted for School Risk
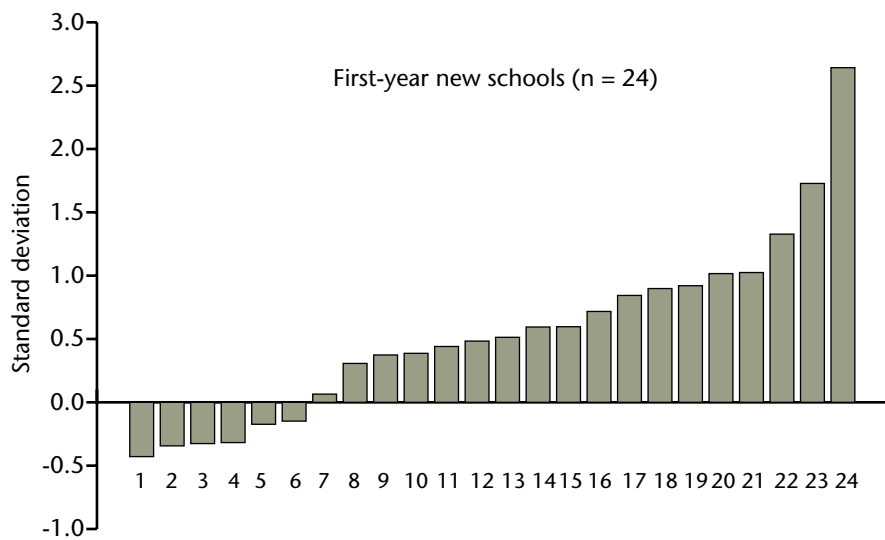

Table A-1 presents the correlations between the implementation index (adjusted for school risk) and selected school characteristics based on survey data from 24 first-year new schools, 15 comprehensive high schools, and 5 model schools. As the table shows, the adjusted implementation index was strongly correlated with most of the school characteristics we examined, and all the correlations were significant at the .01 level.

Table A-1. Correlations between Implementation Index Adjusted for School Risk and Selected School Characteristics

School Characteristic	Correlation with Adjusted Implementation Index
Student enrollment	-.79
Number of teachers	-.79
Student-teacher ratio	-.51
Multidirectional communication (student scale)	.88
Multidirectional communication (teacher scale)	.71
Parental involvement	.61
School decision-making	.91
School leadership	.70
Link to community resources	.73
Inflexible allocation of resources	-.40
Parent/community opposition	-.49
Parent/community apathy	-.60
Staff opposition	-.72
Staff apathy	-.65

Note: All $p < .01$.

Appendix Endnote

[1] We did not include the performance-based promotion attribute in creating the implementation index or in our analyses because the measure we have for this particular attribute was highly unreliable and poorly correlated with the other six attributes or the overall implementation index.