

American Institutes for Research and the University of Michigan, on behalf of the Michigan Department of Education, conducted this study in 2012. We gratefully acknowledge the contributions of principals, teachers, and other respondents who took time out of their busy schedules to respond to our data requests. We are also grateful for the careful review by our colleagues Mette Huberman and Coby Meyers.

Kerstin Carlson Le Floch

Diane Massell

Abigail Stein

Andrea Boyle

Persistently Improving Schools in Michigan Moving Past a History of Low Performance

Introduction

The challenges associated with the nation's persistently low-achieving schools have come to the policy forefront in the past five years. This policy focus was driven, in part, by studies that revealed that schools identified for restructuring under the Elementary and Secondary Education Act (ESEA), as reauthorized by the 2002 No Child Left Behind Act (NCLB), lingered in this status for years, and administrators opted for the least-intensive interventions (Taylor, Stecher, O'Day, Naftel, & Le Floch, 2010). In response, policymakers called for more dramatic action to compel these schools to break the cycle of low performance.

The School Improvement Grants (SIG) program, funded through the American Recovery and Reinvestment Act (which provides \$4 billion in funds for persistently low-achieving schools), has become emblematic of the federal focus on school turnaround. These SIG grants target the lowest 5 percent of schools, which must adopt one of four federal intervention models that include replacement of the principal, increased data use, extended learning time, and (in the case of one model) replacement of half of the teachers.

A set of case studies of six persistently improving schools in Michigan revealed some common practices and dispositions:

- **A Culture of Caring.** Respondents in all schools described themselves as a “family” and provided multiple examples of supports that go above and beyond the traditional roles of principals and teachers.
- **Consistent Practices.** In all schools, respondents described a push to promote instructional consistency and coherence, which was fostered, in part, by collaboration among teachers and data use. Similarly, case study schools had established consistent expectations for student behavior and a no excuses approach.
- **Shared Leadership.** Respondents in all of the case study schools noted actions or processes designed to share leadership responsibilities among staff in the school.
- **Highly Engaged Staff.** Across the schools, teachers expressed excitement about the material they taught, the students whose lives they sought to change, and their colleagues.
- **Islands of Stability.** Despite the turbulent context faced by many low-performing schools in Michigan, these persistently improving schools managed to preserve islands of stability: a core set of teachers, a principal with deep connections to the community, or external support providers that stuck with the school.
- **Visible Changes.** Four of the six schools launched the change process with a set of visible, symbolic, and sometimes disruptive changes that collectively signaled a new era for the school.

At the same time, state education agencies have sought to foster urgency, interventions, and improved outcomes in their lowest performing schools. Under NCLB, states were required to establish statewide systems of support for their lowest performing schools; in the decade since the Elementary and Secondary Education Act (ESEA) was reauthorized, states have refined the ways in which they intervene in and support low-performing schools. As of fall 2013, the U.S. Department of Education had extended flexibility under ESEA to 34 states (and the District of Columbia), which enabled these states to develop systems of support that better targeted schools' needs.

The Study

Throughout the past decade, the Michigan Department of Education (MDE) has sought to implement a thoughtfully designed statewide system of support. Starting in the 2009–10 school year, American Institutes for Research (AIR) and the University of Michigan, on behalf of MDE, began a three-year evaluation of Michigan's system of support. Despite positive perceptions of the supports, the researchers failed to detect statistically significant student achievement gains among schools that received support (Le Floch et al., 2011).

What these results mask are the stories of schools that *were* improving—schools that managed to rise from the lowest levels of student performance to at least the state average. That is, although these schools were in the same challenging context as other low-performing schools in Michigan, they managed to emerge from persistently low-performing status to demonstrate persistent improvement. Thus, in the third year of the study, the AIR–University of Michigan team sought lessons from these schools.

How We Identified Persistently Improving Schools

One of the primary purposes of this study is to learn, from the experiences of schools in Michigan that turned around after a history of low performance, to better inform policy and to share lessons learned with other schools seeking to do the same. Although there are many approaches to identifying such schools, our methodology was informed by two recent studies, each of which present different ways to reasonably define what it means for a school to turn around a history of low performance:

- In *Turnaround Schools in California: Who Are They and What Strategies Do They Use?* (Huberman, Parrish, Hannan, Arellanes, & Shambaugh, 2011), turnaround schools were determined by examining a specific trend in performance over seven years. Turnaround schools were defined as those that started in the lowest third in the state, in terms of academic performance, moved to at least the middle third of the state, and did not experience subsequent declines.
- In a study for the U.S. Department of Education, *Achieving Dramatic School Improvement: An Exploratory Study* (Aladjem et al., 2010), researchers identified “rapid improvement” schools that were in the lowest 50 percent in their respective states in 1999–2000 but made steady gains through the 2004–05 school year.

Both studies yielded a small number of schools from the overall population that met the respective turnaround criterion. In *Turnaround Schools in California*, only 44 schools (2 percent), from a pool of 2,407 schools in the lowest third of mathematics and English language arts performance in California, met all the criteria. In *Achieving Dramatic School Improvement*, only 128 schools (7 percent), from a pool of 1,946 schools that had received a Comprehensive School Reform grant, met all the criteria. However, studies of these different schools—identified through somewhat different criteria—yielded an overlapping, yet different set of successful practices in the turnaround schools.

Turnaround Schools in California cited eight practices that were crucial to their schools' turnaround process: (1) instructional strategies focused on student subgroups; (2) an emphasis on teacher collaboration; (3) strong instructional leadership; (4) regular use of assessments and analysis of data; (5) increased parent involvement; (6) guidance and support provided by the district; (7) use of student engagement strategies; and (8) use of extended learning time.

In *Achieving Dramatic School Improvement*, researchers found that strong leadership, teachers, and staff; the use of data to identify effective practices; strong instructional support strategies; and support from the external community were important factors in their selected schools' turnaround efforts.

The research team for this study chose to identify schools that started in the lowest 10 percent in the state of Michigan but, within five years, had made sufficient progress to be close to or above the state average.¹

To remove the confusion of turnaround definitions, we refer to the schools identified through this study as *persistently improving*.

To complete this analysis, we used the most recent publicly available Michigan student achievement data from the Michigan Educational Assessment Program (MEAP) and the Michigan Merit Examination (MME). The MEAP is administered in the fall to students in Grades 3 through 9, and the MME is administered in the spring to students in Grade 11. To identify persistently improving schools, we focused on mathematics and English language arts achievement data for Grades 3 through 8 and Grade 11 during a six-year period for elementary and middle schools (from 2005–06 through 2010–11²) and a five-year period for high schools (from 2006–07 through 2010–11³). We then applied a series of filters (e.g., removing schools with very low enrollment, missing data, or substantial changes in demographics). Through this approach (see Methodology Appendix for further details), the research team identified a set of 20 persistently improving schools in Michigan, including 9 schools with K–4, K–5, or K–6 grade spans; 7 schools with K–8 grade spans, and 4 schools that included high school grades. Of these schools, four improved in both mathematics and English language arts, nine improved in mathematics only, and seven schools improved in English language arts only.

Case Study Methodology

This report draws from data collected in the third year of an evaluation conducted by American Institutes for Research (AIR) and the University of Michigan. This longitudinal, mixed-methods study was initiated in the summer of 2009 and was concluded in 2012. During the 2009–10 and 2010–11 school years, the study team conducted surveys and school site visits to evaluate the implementation of supports associated with the Michigan statewide system of support. In 2011–12, the study team focused on Michigan schools that showed evidence of improving student outcomes after a history of low performance.

After identifying a set of schools that improved student outcomes (after being in the lowest 10 percent of schools in the state), the study team determined a subset of six schools at which we conducted site visits in the spring of 2012. We sought a balance of elementary, middle, and high schools (with both charter schools traditional district schools) in urban, suburban, and rural settings.

The study team generated case study data primarily from hour-long, semistructured interviews and focus groups with key school improvement stakeholders (including support providers, district administrators, school principals, and teachers) and from extant sources. Interview and focus group protocols featured probes about perceived reasons for the history of low performance; changes to which respondents attributed the gains in student achievement; and improvement strategies associated with instruction, data use, teacher collaboration, student behavior, and other topics.

¹ As noted in the Methodological Appendix, schools had to increase their performance to within three percentage points of the state average by the final year analyzed (i.e., 2010 for MEAP and 2011 for MME). No high schools in the sampling frame met this threshold. Because we sought to understand the improvement process in high schools, we later revised the high school criteria to include high schools that started in the lowest 10 percent in the state but came closest to reaching the state average in 2011.

² 2011–12 MEAP data were dropped because new career- and college-ready cut scores were implemented. As a result, the fall 2011 MEAP cut scores were not comparable.

³ 2011–12 MME data were not publicly available when the sample was identified.

To analyze site visit data, researchers prepared a structured site summary for each case. In each narrative, researchers responded to questions about curriculum and instruction, school leadership and management, culture and climate, parent involvement, state and district support, and challenges. When completing the site narrative, researchers documented how many and which respondents provided data on a given topic. The findings described in this report reflect the most prevalent practices across the schools as well as those practices that have been identified in previous studies of school turnaround.

Persistently Improving Schools: An Overview

Of the 20 Michigan schools that were identified as persistently improving, the research team conducted case study site visits at six schools, including two elementary schools, two K–8 schools, and two high schools. These schools were located in various regions of the state and included three traditional public schools as well as three charter schools. In this paper, the identity of the schools is masked, and school names have been replaced with pseudonyms.

Across these schools, we identified common themes that may help explain how the schools achieved substantial gains in student outcomes. First, we focus on the school leaders and the way in which they charted the course for their respective schools. Second, we turn to a discussion of teachers and instructional practices within case study schools. Here, we highlight themes related to consistency, collaboration, and engagement among teachers and their students. Third, we present findings related to the school culture, in particular, the notable effort in all schools to develop a culture of caring. Because of the small sample size, we can offer only descriptive findings, and the reader should not infer causality; in some cases, however, the respondents themselves identify practices to which they attribute improved outcomes.

Charting the Course: School Leadership

Research on school turnaround has repeatedly underscored the significance of strong leadership in guiding, motivating, and managing change (Aladjem et al., 2010; Bryk, Sebring, Allensworth, Luppescu, & Easton, 2010; Herman et al., 2008). School leaders' responsibilities—and hence, their avenues for influence—cut across all aspects of a school's operation, from overseeing the instructional program to fostering relationships with parents and community partners to promoting school conditions that are conducive to teaching and learning. Leaders approach these responsibilities with varying leadership styles, and scholars in education, business, and other fields have posited numerous models or types of leadership to describe this variation.

We use two different lenses for examining leadership at the six case study schools: *transformational leadership*, which involves energizing and supporting staff around a core vision or mission, and shared leadership, which emphasizes the distribution or delegation of leadership authority across multiple stakeholders in the school. Although these types of leadership emphasize different behaviors, these leadership types are not mutually exclusive; rather, school leaders may demonstrate aspects of each type of leadership.

TRANSFORMATIONAL LEADERSHIP

Transformational leadership exerts influence by shaping individuals' values, perceptions, and aspirations in ways that build their intrinsic motivation to achieve a desired end. Transformational leaders seek to energize staff around a clear vision or sense of purpose; they actively seek out new ideas and strategies for fulfilling that vision or purpose; and they encourage staff to innovate and push themselves to achieve higher levels of performance (Bass, 1998; Burns, 1978; Hallinger, 2003; Leithwood, 1994; Lynch, 2012).

Data from the six case study schools indicate that attributes of transformational leadership were particularly pronounced at Elinor Academy and Chase Academy, where leaders communicated a strong sense of mission, continuously sought new ways to improve opportunities for their students, and challenged staff to be persistent and creative in addressing student needs. Principals at both of these schools described conveying a deep-rooted commitment to providing the economically disadvantaged students in their community with a high-quality education. The principal of Chase Academy reported holding frequent conversations with his faculty to reinforce the importance of their work, often framing the education they provide for their students as a life-and-death matter. He explained:

I tell the staff that what we do is, in some ways, life and death for these kids, and by *death*, I just simply mean we are [not] going to have them lying on the couch all day eating potato chips... If you come here, you are going to learn, and you're going to get pushed in a good way.

To underscore this sense of urgency, the principal would frequently remind staff that the high school had only “4 years, 60 minutes per class, for 6 periods per day” to help prepare students for a bright future. He also articulated a vision for the school that emphasized promoting rigorous educational opportunities for students:

One of the things I tell everyone here is that...we're building a championship high school...and ultimately that means academics. So, that has been the drive, and that has been the push: pushing kids to strive for more [and] pushing staff to push themselves to create opportunities that kids have not previously had, whether it's a math competition at a local college or university or going to visit the Ivy League schools when they come down to do presentations so that kids can see themselves in that light.

The principal of Elinor Academy demonstrated a similar commitment to ensuring educational opportunities for the school's students. By modeling this conviction, he set the tone and mission for the school. “He always says that his biggest priority is educating poor black children, and I believe that,” one teacher explained. “That's his mission... he feels it very passionately, and he shares that with all of us...” The teacher indicated that, by sharing this strong sense of purpose with staff, the principal motivated teachers through intrinsic rewards. “It's a really great feeling to be a part of something,” she noted. “I can't even imagine doing anything else with myself. He [the principal] shares that with us.”

Indeed, the principal underscored the importance of caring about students as a key driver and motivator for the school's efforts. In hiring and dismissal decisions, he sought out teacher candidates who displayed concern for students' well-being and educational success. The principal also modeled these expectations of deep commitment to students, describing his position as a “twenty-four-hour-a-day job” because he was continuously thinking about how to improve conditions for students.

This ongoing search for new ideas to better serve students further reflects qualities of transformational leadership and stood out as important at both Elinor and Chase Academies. The principal of Chase emphasized how his “professional journey continues daily,” keeping his nose in a broad array of leadership books from the business, education, military, and political sectors. “I just am always seeking nuggets in everything that I run across and how can I bring that idea back to Chase Academy,” he declared. As an example, he related an episode in which he was sitting at an outdoor café at a large university and realized that his students did not have access to such an environment in their own community. The school subsequently set up an outdoor eating area for students and began holding regular outdoor barbecues as a means of creating “an environment that is enjoyable, not only for the kids but for the staff as well and let them feel like, ‘Hey, you know, I am worthy of this.’”

Similarly, the principal of Elinor Academy reported reading a great deal of research and bringing innovative ideas for supporting students into the school. “My staff can probably hit their computers and see a thousand and one articles from me,” he noted. “I read books. I share them with staff and ask what they think of this.” He described these efforts to solicit new ideas with great enthusiasm, highlighting how it was not unusual for staff to receive

e-mails from him at four o'clock in the morning because he had awakened during the night with an engaging idea. The principal of Chase described holding "BELIEVING conversations" and providing daily reminders to students and staff to promote a "BELIEF mindset [that] supports creativity and proactiveness." Teachers at Chase reported that they were encouraged to be creative in the classroom and explore new ways of delivering instruction, provided that the instruction was anchored around the state content standards.

At Elinor Academy, the principal supported staff in trying new approaches to meeting student needs. When describing his role at the school, the principal emphasized providing a combination of encouragement, feedback, and support in his interactions with staff. He explained, "My thing is to get my staff everything they need to achieve, and implore them to critique, to direct them, and to listen to them." To promote the staff's use of innovative strategies, he described being careful to couple any criticisms he had with an appreciation for their willingness to take risks. He explained, "I [may] criticize you, but I'm glad you made the effort. I applaud you for making the effort...I am high on...[risk taking]. Try it."

SHARED LEADERSHIP

A second dimension of school leadership emphasizes how leadership functions and authority are shared among multiple individuals within the school. Shared leadership can take many forms (e.g., collective decision-making processes, delegation of leadership tasks, formalized teacher leader roles) and can serve both practical and substantive purposes. For example, extending leadership responsibilities to a broader array of stakeholders can not only reduce the workload of overextended principals but also can increase teacher motivation, promote better working conditions, and build collective ownership of school needs (Camburn, Rowan, & Taylor, 2003; Louis, Leithwood, Wahlstrom, & Anderson, 2010; Orchard, 2010).

Respondents in all of the case study schools noted actions or processes designed to share leadership responsibilities among staff in the school. The principal at Bellows Falls described increasing teachers' involvement in school decision making as a means of fostering a shared sense of responsibility for school and student needs. He explained:

That's where shared decision making comes in. Teachers have to have ownership to buy into what those needs are. We didn't tell them what the needs of our district are. We started to show them data. We started to show them, "This is what we have coming up; this is where we're at; what do you guys think? Talk about it, come up with ideas." And they were very accurate.

The principal emphasized how a set of teacher leaders who were "very young but not afraid to make people step up and think" were instrumental in facilitating that process. The process not only empowered teachers to internalize and act upon school needs but also afforded opportunities for teachers to engage in acts of leadership among their peers.

Similarly, administrators at Elinor Academy established multiple, subject-matter-based committees of teachers to work on curriculum and instruction issues as a means of providing avenues for staff to exert influence in school decision making. The principal, whom respondents described as "approachable" and "straightforward," highlighted how these structures were part of a broader effort to ensure teachers felt that their voices were being heard. "You never feel like you can't go in the office and say, 'I was thinking about this. What do you think of this?'" he explained.

At Opal, the principal also stressed the importance of eliciting teachers' honest feedback, relating how she would encourage staff to "express why they agree or don't" because she "might not see things the way that they see things." In particular, the Opal principal indicated that she would draw on select veteran teachers whom she perceived to be "key players" within the school to inform the implementation of new instructional strategies and to communicate those strategies to staff. For example, she would talk with a teacher who had "been in education so

long, she has seen a lot cycle through” to seek her questions and input on new initiatives. “[Teachers] will listen to her [so]...I ask her first, ‘What do you think?’” The principal found this strategy of leveraging teacher advocates particularly helpful when, as a new leader in the school, she was seeking to build trust among the staff.

Beyond promoting teachers’ engagement and investment in school improvement, efforts to share leadership responsibilities arose in some cases out of a recognition that such responsibilities were too great for the principal to shoulder alone. For example, the principal at Chase Academy described how he “stretched and expanded” the school leadership team because the manifold demands that are placed on a school leader’s time made it difficult for him to be in classrooms every day. Staff at Chase noted that the principal carefully selected members of this leadership team to include individuals who would model his philosophy and be invested in the school’s improvement efforts.

At Elinor Academy, the principal “realized after a few years that he couldn’t do everything himself” and requested that the school board establish a new curriculum director position to assist him in providing instructional leadership. The addition of the curriculum director enabled the principal to capitalize on situations in which he could not perform his regular duties to develop leadership capacity among the school’s teachers.

In summary, leadership styles at the six case study schools varied but often reflected leadership styles that prior research has linked to organizational improvement. Respondents at each site reported efforts on the part of school leadership to provide guidance related to the school’s instructional program. Moreover, leadership authority and responsibility in these schools were often shared—either formally or informally—across multiple staff within the school rather than being the sole province of the school principal. At two of the schools, principals reportedly exemplified a transformational leadership approach; these principals sought to energize staff around a clear school mission and doggedly pursued innovative ways to meet the needs of their students.

SIGNALING CHANGE: VISIBLE AND SYMBOLIC CHANGES

The literature on the school turnaround process, although limited, offers evidence that organizations that successfully improve outcomes signal the launch of the change process through a set of visible, symbolic, or disruptive actions. Such actions may be designed to create a break with organizational norms or culture, to generate early wins, or to build a campaign for a vision of success through outreach and communication (Hassel & Hassel, 2009). In a school setting, these actions might include new policies for student behavior that result in an improved school climate, increasing instructional time for all students, or a door-to-door effort to convince parents that leaders have a new vision and plan for the school. Often, visible changes are accompanied by human capital changes: a new principal, replacement of teachers, the addition of instructional support staff, or a combination of these changes. Because such changes can be disruptive, they may not be perceived as positive, at least initially.

In four of the case study schools in this sample, there was evidence that school leaders took steps to signal a change of course through visible and symbolic changes. However, in all cases, our data are hampered by the retrospective nature of our study: We asked staff to reflect upon activities that took place many years ago, and, in some cases, teacher turnover reduced the pool of potential respondents. On balance, our data provide enough evidence to conclude that such visible actions demarcated the point of departure for the turnaround process.

For example, the Round Pond Academy went through a transition in 2004–05, when a new principal instituted a set of changes with regard to human capital, materials, and rules. As one veteran teacher explained:

When I first started here seven years ago, there was a huge transition period...it was a big upheaval...they hired [a new principal] and he brought in a completely new staff, and what he did is, he told [administration] that he was going to do things his way. He was a very “take charge, do it like this, I know what’s needed” kind of person...We were at peak performance. We had new materials, all new staff, and it was really—and he said

it, even to the parents, this is a time of change...We brought about the idea of being more regimented, having rules, and accountability, and consistency, and we really started doing those things. And everyone who has come since, they have really brought in staff who are like minded. At that time, that's when there was a dynamic change, a shift.

The change process at Chase Academy was launched in 2007 when the current principal assumed the helm of the high school. Teachers who participated in focus groups and interviews affirmed that the changes in the school were like “night and day” and that the school was “very disorganized” before the current principal started. First, the principal acted on a set of “low-hanging fruit” opportunities, such as “sprucing up the school” with improved landscaping, fresh paint, and banners and distributing free backpacks to all students so that they could carry their books from class—previously, the school culture was such that it was considered “uncool” to be seen with schoolbooks.

Likewise, Elinor Academy experienced a set of visible and symbolic changes when the current principal assumed school leadership in 2001. First, the new principal dismissed all teachers and hired faculty who endorsed his vision for the school: “I fired everybody,” he explained, “They weren't committed to what I'm committed to.” After the principal accepted his new position, but before the start of the school year, the school was perceived to be in decline, and enrollment had dropped below 40 students. To boost enrollment and to stave off negative reports about the school, the principal and teachers walked through the neighboring community, knocking on doors, talking to parents, and encouraging them to send their children back to Elinor Academy. Finally, according to the principal, the 100-year-old school building was dirty and in disrepair when he started. Improving the building, he explained, “took a lot of sweat equity from my family.”

At Bellows Falls High School, the change process was launched in conjunction with an effort to pass a bond referendum to build a new high school. The results of this process, which included a joint effort on the part of the school board, district superintendent, and other administrators, was a focused vision for the school, through which they would empower staff to become “risk takers.” In addition, moving into the new building instilled the school community with pride, according to one school board member, and signaled a new beginning for the school. “Building a new building [in 2008–09] and moving the kids out of the 70-year-old building had a lot to do with the sense of pride, and I think that helped.”

In summary, each of these four schools instituted a number of visible and, in some cases, norm-breaking, potentially disruptive activities that collectively signaled a departure from practices that had been associated with a history of low performance. In each case, the change was accompanied by a new principal, two of whom are still at the schools they turned around. Two schools also experienced a substantial turnover among faculty at the time of greatest change. The literature regarding the school turnaround process provides insufficient evidence on the number of changes needed to signal such a change or the perceived magnitude of the changes. However, the data from these cases suggest that a set of visible, symbolic, and even disruptive actions can kick-start the change process and shake up entrenched practices that contributed to a history of low performance.

However, we should note that two schools in this sample did not report a similar set of visible, symbolic changes as the schools embarked on an improvement process. Although these schools were also low performing (in the bottom 10 percent), in two of these schools, the change process appeared to be more gradual and deliberate, at least in the way their stories were recounted by interviewees.

PRESERVING ISLANDS OF STABILITY

One of the most notable challenges to improving student outcomes is the often-chronic churn in the environment of high-poverty schools. This churn manifests itself on multiple fronts: in the transience of an economically distressed student population; in teacher turnover, which tends to be more acute in schools serving low-achieving,

poor, nonwhite populations (Hanushek, Kain, & Rivkin, 2004; Keesler & Schneider, 2010); and in new district or school leaders who seek to implement their own initiatives that are layered on top of or that upend existing efforts. The removal of funding, the loss of an external support provider, or changes in policy also can send conflicting messages that add to a climate of instability. As documented in this study's earlier reports (Le Floch et al., 2011), these types of churn were among the most pressing challenges to low-performing schools in Michigan. Without some measure of stability over time, sustainable improvement in student outcomes is nearly impossible.

Most of the schools in our case study sample experienced some level of churn. Although principal leadership was stable at four schools (Elinor, Chase, Opal, and Bellows Falls), Round Pond and Pullman each were led by four principals over seven years. Teacher turnover in at least three of these buildings was consistent with the relatively higher rate of turnover typically occurring in urban, high-poverty schools: Nationally, these schools typically lose about one fifth of their staff each year (Ingersoll, 2004). Respondents in Elinor and Pullman estimated a loss of one fifth of their teachers each year, for example, and two waves of teachers at Round Pond followed their exiting principals to new schools.

Despite this turnover, we found that each of these schools managed to preserve islands of stability during the 2005–2010 period: a core set of teachers, a principal with deep connections to the community, or external support providers that stick with the school. In two schools (Bellows Falls and Chase), the principal had deep roots in the community. All schools were able to retain a stable core of teachers, who were described as passionate and mission driven. In several instances, these teachers assumed formal or informal leadership roles, such as mentoring other staff (Pullman) or engaging in long-term improvement planning (Round Pond). In our three public schools (Opal, Bellows Falls, and Pullman), the district was seen as a stable force, providing consistent instructional and curricular guidance or helping to secure additional resources to stabilize practices or populations.

Thus, these six schools, each with a history of low performance, managed to preserve islands of stability that served two primary purposes: (1) The continuity in leaders—whether principals or teacher leaders—helped sustain and institutionalize improvement initiatives that might have otherwise been derailed, and (2) these pockets of stability helped buffer the school from outside churn that might have hindered efforts to preserve internal coherence.

Into the Classroom: Teachers and Instruction

At the heart of the school are those who introduce and instill academic content in the classroom: the teachers. In these case study schools—as in turnaround schools documented in other studies—improved outcomes appear to be associated with changes to the instructional core of the school. As a respondent from Chase Academy explained, “It’s the teachers that make the school click.” An analysis of classroom practices was not the focus of this study; however, self-reported data were synthesized into themes. These themes include: teacher engagement, instructional coherence, consistent disciplinary policies, collective efficacy, and use of data to inform instruction.

ENGAGED TEACHERS STRIVE TO ENGAGE STUDENTS

Across the schools, teachers expressed excitement about the material they taught, the students whose lives they sought to change, and their colleagues. The words *passionate* or *excitement* were used in five of the schools. Teachers were actively engaged in their instructional content, seeking ways to leverage research to instill rigor and connections to the material. At Elinor, Bellows Falls, and Chase Academy, the principals allowed—and encouraged—teachers to try new strategies in the classroom, with the understanding that teachers were expected to show evidence of the effectiveness of their methods.

At Round Pond, one teacher explained, “teachers here have an affinity and an appreciation of literature, and the students can see our excitement.” She explained that her class was reading *Charlotte’s Web* for the second time, to identify different components of the text: “This time we’re reading for different ideas, building the love of literature, finding different pieces of the text that we might have missed before, now we have connections, text-to-self, and oh my gosh! text-to-world connections.” In addition to a passion for the academic content, teachers across schools were committed to their students and their school’s mission. “Pullman has a reputation for struggling students, and teachers come knowing this—they’re attracted to the building... the ones who stay are dedicated,” the principal explained, “They get a lot of satisfaction by the work that they do here, so they stay.”

INSTRUCTIONAL COHERENCE

In all of the schools, a focus on instruction and consistent expectations throughout the school was perceived to be a source of success; and, in all schools, a lack of instructional coherence was one of the factors to which respondents attributed their prior history of low performance. At Pullman, for example, teachers described multiple mathematics programs within the district and even within the school; at Bellows Falls, teachers were all “doing their own thing,” with regard to instruction; and Chase Academy was simply described as “disorganized” prior to the improvement process. In each of these schools, respondents described a process through which they became more organized, more focused, and more consistent throughout the school, with regard to instruction.

In all schools, a lack of instructional coherence was one of the factors to which respondents attributed their prior history of low performance.

At Bellows Falls High School, the principal described a purposeful effort to “shrink the focus” to ensure instructional consistency throughout the school. As he explained:

When state standards were being rolled out, teachers...couldn’t just blow the dust off their lesson plan book and start again...we focused on best practices, we focused on pacing...That’s what I mean by narrowing our focus; we stopped just doing our own thing...[we said], we’re going to start identifying where our gaps are in the curriculum, we have to fill these weaknesses, and it’s not going to be filled in a year, but we have to see that continuous improvement...I feel that we’re showing the growth that we wanted to show, and it’s [because of] the quality of instruction in the classroom.

At Elinor, the curriculum director—who works closely with the principal—oversaw instruction and reviewed teachers’ weekly lesson plans, which she expected to align with the state’s grade-level expectations. At Opal, teachers and administrators credited the Reading First program for having pushed staff to adopt a common instructional approach, to work toward schoolwide goals, and to generally “be on the same page.” At Round Pond Academy, one teacher explained, “it’s all about structure, routine, and consistency. Having procedures set forth, it gives kids predictability... as long as you have a good structured classroom down, a good routine, you have a schedule, the kids know what to expect. They want to be told what to expect. Their home outside of this school is very chaotic, there is no predictability.”

COLLECTIVE EFFICACY: NO EXCUSES

Another distinguishing feature of the teachers in the six case study schools was the no excuses approach to teaching a difficult population: Although teachers acknowledged that their students were challenged by poverty, unstable home situations, and in some cases language barriers, they did not blame the socioeconomic circumstances for their prior history of low performance. Rather, they found ways to overcome these challenges, through extra time, wrap-around services, compassion, and structures. As one teacher from Round Pond explained, her students’ “socioeconomic status brings a multitude of [challenges] all of which are easily overcome with some

time.” And the principal from Pullman noted, “Kids come to kindergarten not knowing their letters, not ever having been read to...if they come here without those early learning experiences...we just gotta give them those experiences and get them going.” Indeed, such expressions of collective efficacy are frequent signals of schools that produce higher achievement levels.

The instruction we facilitate is something we can control; we'd better be darn good at it.

School-level staff also may feel constrained by a turbulent policy context, which engenders feelings of powerlessness. In the first two years of data collection for MDE, we found that administrators and teachers in other low-performing schools in Michigan felt hindered by frequent changes in policy, whether federal, state, or local (Le Floch et al., 2011). In contrast, the respondents in these case study schools refused to be distracted by policies outside of their control. Rather, they built their own zones of autonomy and rallied the school staff around their schoolwide goals. As the principal of Bellows Falls School explained:

We have a belief in this building, and it's districtwide, it's come from our board and our superintendent: We can't control what comes down from the state, we can't control federal things that come down and are put upon us, so we'd better control what we can control. The instruction we facilitate is something we can control; we'd better be darn good at it. We'd better do the best that we possibly can to improve if we're not where we need to be.

USE OF DATA TO INFORM INSTRUCTION

During the past 10 years, the practice of data-driven decision making in public schools has received increased attention. Secretary of Education Arne Duncan has called data “...the road map to reform. It tells us where we are, where we need to go, and who is most at risk” (U.S. Department of Education, 2009). The literature on data use in K–12 education suggest that to effectively use data to make instructional decisions, districts or schools must: (1) make data a part of an ongoing cycle of instructional improvement; (2) teach students to examine their own data and set learning goals; (3) establish a clear vision for schoolwide data use; (4) provide supports that foster a data-driven culture within the school; and (5) develop and maintain a districtwide data system (Hamilton et al., 2009).

In all six of the case study schools, data use was vital to the schools' improvement stories. In each case study school, data-driven decision making strategies were initiated at the district and/or school levels. At Bellows Falls High School, leaders made data a part of an ongoing cycle of instructional improvement and students examined their own data and set learning goals. Further, teachers reported modifying their teaching in response to formative assessments. Daily warm-ups were implemented schoolwide to facilitate reflection on instruction from the day before. The institutionalization of this activity reportedly enhanced the teachers' abilities to determine whether the students were prepared to move on to new material. One teacher in the history department asked his students to chart their own understanding of the material. As the teacher said:

For example, they will chart out their test scores. Let's say on the pretest they received a 60 percent and on the posttest they received a 90 percent. They can see the difference...confidence comes when they make progress...I allow my students to re-do tests so they can add another bar to that graph that may be even higher.

At Chase Academy, school leaders established a clear vision for schoolwide data use and provided supports that foster a data-driven culture within the school. Teachers described monthly standards reports, which were a compilation of the assessments administered each month. These reports allowed the teachers to swiftly identify students receiving Ds and Fs. Likewise, at Round Pond Academy, the school improvement facilitator said:

Sometimes people say to schools and teachers, “You need to improve reading,” and that is just far too general...data is useful but it has to be used and interpreted to be useful. There has to be a plan for it. If not, it just sits there.

Data is useful but it has to be used and interpreted to be useful. There has to be a plan for it. If not, it just sits there.

At Opal and Pullman, the push to engage with data came from the district level. The principal of Opal Elementary reported that the superintendent was very data driven, hosting regular meetings at the central office that focused on data and recognizing those teachers who were high performing. At Pullman, one teacher said, “Everything we do in this district is talk about data.” The principal reported:

The best thing I can say that we do is that we are a data-driven district. We are very data driven in this building, where we gather information on kids from the minute they walk in the door and we meet them where they're at with instruction and supports. If there is a kid that comes in that is way below, right away we are adding on either before school, during lunch, or after school supports with that kid. We're identifying kids from the get-go.

At Elinor Academy, extensive data use began in 2005 when the principal hired a new curriculum director who provided the needed supports that began to cultivate a data-driven culture within the school. The curriculum director frequently observes and provides feedback to teachers. She reviewed lesson plans that she expected to meet Michigan grade-level expectations, and followed through to make sure the teaching was consistent with the plans. One teacher reported, “She [curriculum director] asks us, ‘What did you find out after you taught geometry for about three weeks and did the test? Who needs the most help? In which areas did students still not do well?’ and then we pick up on that and try to find a different way to address the issue.” Moreover, data were publicly displayed in classrooms, hallways, and the principal's office. During an interview, one fourth-grade teacher pointed to a bulletin board hanging on the wall and said, “There's a bulletin board that we put up to show them, not with their names but by grade level, their success. So they feel that pride in themselves. [My students] always say, ‘I'm going to get that bar even higher.’” Another teacher said:

I really do believe that [Elinor Academy] has turned around with all of my heart because we have worked really hard, especially the curriculum director, to make sure that the teachers are looking at the scores, the data, and that we create lessons based on the data, and we try to work in the areas that need improvement. For example, geometry was one of the areas that was identified as a problem, so we made sure that we hit those in our teaching...we made an intentional move to make sure that we touched on those areas of need.

In summary, respondents in each of these six schools described more efficient use of data to inform instructional decisions albeit in varying ways. One of the schools made data a part of an ongoing cycle of instructional improvement. Another school taught students to examine their own data and set learning goals. Three schools established a clear vision for schoolwide data use. Three schools provided supports that fostered a data-driven culture within the school, and one school developed and maintained a districtwide data system.

Culture and Climate in Persistently Improving Schools

In addition to mentioning the establishment of cohesive instructional expectations and practices, respondents frequently referred to improvements in the climate and culture of the school as major contributors to their upward trajectory. Several studies have posited that a supportive school culture involves a caring community, trusting relationships, and high expectations for student achievement (e.g., Bryk & Schneider 2002; Goddard, Hoy, & Hoy, 2004; Louis, 2007). In all six persistently improving schools that were the focus of this study, staff members attributed their gains (in part) to one or more of these aspects of school culture.

A CULTURE OF CARING

A prominent theme across all schools was the conviction that the presence of strong, caring relationships was critical to their improvement. Staff in five schools used the metaphor of the school as family and described close, kinship-like feelings, especially between staff and students. As the curriculum director at Elinor Academy explained, “I tell parents, your kids are mine when they are here...If they are mine, I want the best for my kids.” Similarly, one Bellows Falls teacher commented, “We truly believe this is family here. We speak very genuinely about it. We are small enough that we are able to do that...we take care of our kids and give them the best opportunity. We want our family members to be prepared for the world.”

Creating a culture of caring was the central theory of action for the principal at Elinor Academy, who believed that it was the foundation for any future academic success. Just prior to his arrival, the school was roiled when the majority of families declined to reenroll their children for the upcoming academic year. The principal attributed their decision to leave to teachers’ unwillingness or inability to connect with students and parents; he observed that the teachers typically left the building as soon as the last bell rang, suggesting that they lacked the commitment needed to educate children in a high-poverty school. In his words:

I wanted [a school building] where folks actually care about kids. That is the first step. If you care about kids, you’re going to work beyond. You’re not a clock watcher. If you care about kids, you’re going to create the programs and institutional habits that would cause parents to become involved, that would cause kids to want to achieve.

This comment identifies components of what scholars have termed relational trust, an essential feature of a positive school culture. Specifically, individuals’ willingness to move beyond formal job descriptions and contracts is what Bryk and Schneider (2002) call “personal regard.” Among other things, such actions signal that individuals are committed to the purpose and goals of the work and that they can be trusted to do what is necessary to accomplish those goals. Another feature of relational trust in schools is *personal integrity*, the belief that participants are acting with the purpose of improving the education and well-being of children (Bryk & Schneider, 2002).

“*Good instructional strategies are magnified through relationships teachers have with students.*”

Respondents from across the schools recognized that building caring relationships with students was a key ingredient in student motivation and engagement. Although many respondents acknowledged that their students did not come to school ready and motivated to learn, they saw it as their responsibility to develop this interest and capacity. An external support staff for Chase Academy noted that the school had developed a culture of concern and care, where respect was evident between faculty and students. “I believe good instructional strategies are magnified through relationships teachers have with students. If you don’t have a relationship on a positive level, you are not going to reach them.” Interviewed teachers felt responsible for motivating students. Said one teacher, “When they see that you care, you see a lot of quality work come out. They realize that we are in this together.” Similarly, a Bellows Falls teacher noted that “These kids can do phenomenal things, but they have to know that you care.” Such sentiments were voiced by staff in other schools as well; teachers from Round Pond Academy explained, “The relationships piece makes us more of a family school. You have to earn their respect, and when that happens the door is open.”

A few of the case study sites placed an emphasis on wrap-around health, nutritional, and other services to ensure the students were healthy and ready to learn. In 2006, Pullman Elementary began working with two foundations to make the school a central site for health, dentistry, and social services and family literacy programs; during the summer, the school opened its library and continued to provide meals. In addition, to ensure that students could

start school ready to learn, the school installed shower facilities and a washer and dryer and provided three meals a day for students in need. Likewise, Elinor Academy provided, in addition to the usual breakfast and lunch programs, a range of health and social services, serving dinners to students in afterschool programs and filling the backpacks of students in need with food for the weekends. At Round Pond Academy, the principal herself drove students to school on a daily basis. Like elsewhere, teachers at Round Pond Academy provided clothing to students when necessary: “They come in and say, ‘My clothes are dirty,’ so we help as much as we can.” Round Pond teachers explained that the boundaries between faculty, students, and parents are different than in a traditional school: Both students and parents alike seek the advice of teachers for issues related to academics, family relationships, and financial troubles. Teachers give out personal phone numbers, set up online media sites specifically for school purposes, and exchange texts at almost all hours. As one fourth-grade teacher related, “One of my students texted me last night at 10 p.m., and I said, “Thanks, but shouldn’t you be in bed?”

CONSISTENT DISCIPLINE

By 2012, all six of the persistently improving schools appeared to have resolved the majority of past problems associated with student discipline and behavior. As with instruction, discipline was anchored by clear, schoolwide rules for student behavior. At Opal, the principal had instituted *kick-offs*, in which they would “train the kids” on how they were expected to comport themselves as a student. One teacher explained that she provided explicit teaching regarding what it means to be a student:

I actually teach them how to sit in the chair, how somebody looks who’s paying attention. They’re looking at the speaker, their arms are folded, their knees are under their desks. I explicitly teach all of that...Without self-control, without a quiet environment, without the teacher being able to talk without being interrupted, learning, in my opinion, cannot occur.

In at least three of the schools, teachers consciously presented a unified front with regard to discipline and relied on each other through a *buddy system*, in which teachers could send students to a neighboring classroom if the students were being disruptive. Such was the case at Round Pond, where one teacher often took the lead as the disciplinarian. She explained:

If a child is acting up in [another teacher’s] classroom, they bring them to me. [The students] sit down...until they are mentally ready. They don’t just come into my room and not think. I am a firm believer in, you will stop and think about your behavior and then you will apologize. I will then talk to them about how you stay out of trouble, and we will dialogue.

Conclusion

Schools that successfully turn around a history of low performance are rare—indeed, one researcher claimed that chronically low-performing schools have such tenacity that they are “immortal” (Stuit, 2010). Few schools in which student achievement has reached the lowest decile ever manage to improve substantially. But a core set of practices has emerged from case studies of such schools, whether they are described as persistently improving, turnarounds, or rapid improvement schools.

This study was both descriptive and retrospective; our methodology does not support causal relationships between any of the described practices and student outcomes. However, the practices described in these six schools in Michigan are largely consistent with prior studies of school turnaround, pointing to the importance of leadership; a focus on consistent instruction; and a collaborative, supportive culture. In addition, these schools managed to preserve islands of stability, which is particularly notable in the turbulent context of Michigan’s low-performing schools; and, with the economic challenges also facing chronically low-performing schools in Michigan, the fact that these schools progressed from underperforming to average is both remarkable and reassuring, perhaps providing lessons to other, similarly challenged schools.

References

- Aladjem, D. K., Birman, B. F., Orland, M., Harr-Robins, J., Heredia, A., Parrish, T. B., et al. (2010). *Achieving dramatic school improvement: An exploratory study*. Washington, DC: U.S. Department of Education; Office of Planning, Evaluation and Policy Development; Policy and Program Studies Service.
- Bass, B. (1998). *Transformational leadership: Industry, military, and educational impact*. Mahwah, NJ: Erlbaum Associates
- Bryk, A. S., & Schneider, B. (2002). *Trust in schools: A core resource for improvement*. New York: Russell Sage Foundation.
- Bryk, A. S., Sebring, P. B., Allensworth, E., Luppescu, S., & Easton, J. Q. (2010). *Organizing schools for improvement: Lessons from Chicago*. Chicago, IL: University of Chicago Press.
- Burns, J. M. (1978). *Leadership*. New York: Harper & Row.
- Camburn, E., Rowan, B., & Taylor, J. (2003). Distributed leadership in schools: The case of elementary schools adopting comprehensive school reform models. *Educational Evaluation and Policy Analysis, 25*, 347–373.
- Goddard, R. D., Hoy, W. K., & Hoy, A. W. (2004). Collective efficacy beliefs: Theoretical developments, empirical evidence, and future directions. *Educational Researcher, 33*(3), 3–13.
- Hallinger, P. (2003). Leading educational change: Reflections on the practice of instructional and transformational leadership. *Cambridge Journal of Education, 33*(3), 329–351.
- Hamilton, L., Halverson, R., Jackson, S., Mandinach, E., Supovitz, J., & Wayman, J. (2009). *Using student achievement data to support instructional decision making* (NCEE 2009-4067). Washington, DC: National Center for Education Evaluation and Regional Assistance, Institute of Education Sciences, U.S. Department of Education. Retrieved from <http://ies.ed.gov/ncee/wwc/publications/practiceguides/>
- Hanushek, E., Kain, J., & Rivkin, S. (2004). Why public schools lose teachers. *The Journal of Human Resources, 39*(2), 326–354.
- Hassel, E. A., & Hassel, B. C. (2009). The big U-turn: How to bring schools from the brink of failure to stellar success. *Education Next, 9*(1), 21–27.
- Herman, R., Dawson, P., Dee, T., Greene, J., Maynard, R., & Redding, S. (2008). *Turning around chronically low-performing schools: A practice guide*. Washington, DC: U.S. Department of Education, Institute of Education Sciences.
- Huberman, M., Parrish, T., Hannan, S., Arellanes, M., & Shambaugh, L. (2011). *Turnaround schools in California: Who are they and what strategies do they use?* San Francisco, CA: California Comprehensive Center at WestEd.
- Ingersoll, R. (2004). Why do high-poverty schools have difficulty staffing their classrooms with qualified teachers? Washington DC: Center for American Progress. Retrieved from <http://www.americanprogressaction.org/wp-content/uploads/kf/Ingersoll-FINAL.pdf>
- Keesler, V., & Schneider, B. (2010). *Estimating cause: Teacher turnover and school effectiveness in Michigan*. Paper presented at the annual conference of the Society for Research on Educational Effectiveness, Washington, DC.
- Le Floch, K. C., Barnes, C., Massell, D., Boyle, A., Therriault, S. B., Taylor, J., et al. (2011). *Evaluation of Michigan's statewide system of support for high-priority schools: Year 1 report*. Washington, DC: American Institutes for Research.
- Leithwood, K. (1994). Leadership for school restructuring. *Educational Administration Quarterly, 30*(4), 498–515.
- Louis, K. S., (2007). Trust and improvement in schools. *Journal of Educational Change, 8*(1), 1–24.
- Louis, K. S., Leithwood, K., Wahlstrom, K. L., & Anderson, S. E. (2010). *Investigating the links to improved student learning. Final report of research findings*. New York, NY: The Wallace Foundation.

Lynch, M. (2012). *A guide to effective school leadership theories*. New York: Routledge.

Orchard, J. (2010). *Should school leadership be 'shared'?* Oxford: University of Oxford.

Stuit, D. (2010). *Are bad schools immortal? The scarcity of turnarounds and shutdowns in both charter and district sectors*. Washington, DC: Thomas B. Fordham Institute.

Taylor, J., Stecher, B., O'Day, J., Naftel, S., & Le Floch, K. C. (2010). *State and local implementation of the No Child Left Behind Act. Volume IX—Accountability under NCLB: Final report*. Washington, DC: U.S. Department of Education; Office of Planning, Evaluation and Policy Development; Policy and Program Studies Service.

U.S. Department of Education. (2009, June 8). *Robust data gives us the roadmap to reform* [Press release]. Retrieved from <http://www.ed.gov/news/speeches/robust-data-gives-us-roadmap-reform>

Methodological Appendix

Rather than looking at standardized achievement scores, we focused on the average proficiency rate of schools, because a proficiency rate is a familiar and policy-relevant metric. For elementary schools, we examined the average proficiency rates in Grades 3–5, and, for middle schools, we considered the average proficiency rates for Grades 6–8. High schools included only Grade 11. At all school levels, we calculated the average proficiency rates for mathematics and English language arts separately. For the purposes of this analysis, combination schools (i.e., K–6, K–8, K–12) were treated as both an elementary school and a middle school and were included in both analyses separately. Thus, a K–8 school could have been labeled as persistently improving in Grades 3–5 or 6–8 or both.

Our school selection process involved 10 steps, as follows:

- 1. School Type Filter.** Nontraditional public schools, such as special education schools and alternative schools, were dropped from the analysis. All other public schools and public charter schools in the state of Michigan were included.
- 2. Small Enrollment Filter.** Schools with a total enrollment of fewer than 20 students were dropped from the analysis.

Table 1. Number of Schools Included in the Sampling Frame After Applying Criterion 1 and Criterion 2

	Elementary Schools Retained	Middle Schools Retained	High Schools Retained	All Schools Retained
Total	2,207	1,615	1,113	4,935
1. School Type Filter	2,156	1,530	715	4,401
2. Small Enrollment Filter	1,780	1,258	651	3,689

Note: The *N* of elementary (2,207) and middle (1,615) schools in this table does not sum to the total *N* of elementary and middle schools in the original MEAP dataset (3,084) due to intentional double counting. For example, if a school was K–8, the school was included as both an elementary and a middle school in the analysis.

3. **Missing Test Data Filter.** Schools were then analyzed separately by content area. A school could be labeled as persistently improving in mathematics or English language arts or both. To be included in the analysis, schools had to have complete data in either mathematics or English language arts scores for all years included in the analysis (i.e., no missing data).
4. **Sustained Performance Filter.** To ensure that schools sustained their performance, we calculated the average gain in MEAP and MME scores for both mathematics and English language arts between each year. Schools were not included in the analysis if their proficiency scores dropped more than 1 standard deviation from year to year.
5. **Initial Low Performance.** Schools had to be in the bottom 10 percent⁴ of proficiency scores in the first year of data analyzed (i.e., 2005 for MEAP and 2007 for MME).
6. **Growth Endpoint.** Schools had to increase their performance to within 3 percentage points of the state average by the final year analyzed (i.e., 2010 for MEAP and 2011 for MME). No high schools in the sampling frame met this threshold. Due to our desire to include a few high schools in the sample, we later relaxed the high school criteria to include high schools who came closest to reaching the state average in 2011, while still meeting other criteria described here.
7. **Demographic Filter.** To control for changes in demographics that may explain achievement growth, we filtered out schools that showed a decrease in the percentage of students eligible for free or reduced-price lunch. In addition, we wanted to focus on schools that served students primarily from under-privileged backgrounds. Thus, any school that had, on average, less than 40 percent of students eligible for free or reduced-price lunch during the years analyzed was dropped.
8. **Enrollment Filter.** We added a similar control for changes in student enrollment. We dropped schools that showed a decrease in enrollment of 50 percent or more between the beginning and end years of our analysis.
9. **The “Other Subject” Filter.** Our analysis did not require that a school meet the above criteria in both mathematics and English language arts to be considered a persistently improving school. However, schools in which the achievement levels for the “other subject” stayed in the lowest 10 percent, stagnated, or fluctuated dramatically were dropped under the premise that this showed inconsistency. For example, if a school met all our criteria in mathematics achievement but its English language arts scores never left the bottom 10 percent, the school was dropped from the sample.
10. **Sufficient Grade-Level Representation Filter.** Due to the fact that proficiency scores were averaged across grades (3–5 for elementary and 6–8 for middle) and some schools had nontraditional grade ranges (e.g., K–3 or K–6), schools for which only one grade of data determined its improving status were dropped. For example, if a K–6 school showed up as a persistently improving middle school because of assessment results for the sixth grade, the school was dropped. On the other hand, if this school also showed up as an improving elementary school because of its third, fourth, and fifth graders, then the school would remain in the sample.

As Table 2 shows, from a pool of 596 math/ELA programs in the lowest 10 percent of schools (Criterion 5), we identified 23 math/ELA programs (or 4.4 percent) that met all the criteria. Of these 23 programs, 20 were elementary school level and 3 were middle school level. As mentioned in criterion 6, because of our desire to include a few high schools in the sample, we also included 3 high schools that made it the closest to the state average by the final year of the high school analysis (2011).

⁴ Note that this is a substantially lower threshold than has been established by other studies. Due to the current emphasis in state and federal policy on persistently low-achieving schools (often in the lowest 5 percent of schools), we determined that the thresholds established by Huberman et al. (2011) and Aladjem et al. (2010) were too high for this study, because we sought to focus on schools that had been among the lowest performers in the state.

Table 2. Number of Schools Included in the Sample After Applying the Remaining Criteria

	Elementary Schools		Middle Schools		High Schools		All Schools	
	Math	ELA	Math	ELA	Math	ELA	Math	ELA
Total	1,780	1,780	1,258	1,258	651	651	3,689	3,689
3. Missing Test Data Filter	1,652	1,653	963	963	608	609	3,223	3,225
4. Sustained Performance Filter	1,570	1,472	928	828	572	535	3,070	2,835
5. Initial Low Performance	157	147	93	83	61	55	311	285
Lowest 10 Percent of Schools	157	147	93	83	61	55	311	285
6. Growth Endpoint	20	13	9	7	2	2	31	22
7. Demographic Filter	18	11	9	5	2	2	29	18
8. Enrollment Filter	18	11	8	4	2	2	28	17
9. The “Other Subject” Filter	13	11	5	3	2	1	20	15
10. Sufficient Grade-Level Representation Filter	11	9	2	1	2	1	15	11
Final Sample	11	9	2	1	2	1	15	11

Note: Although there are 26 separate mathematics and English language arts programs within schools that were labeled persistently improving, there are only 20 schools in the final sample. This is because of intentional double counting due to schools with wide-spanning grades and the fact that we analyzed mathematics and English language arts improvements separately.



1000 Thomas Jefferson Street NW
 Washington, DC 20007-3835
 877.322.8700 | 202.223.6690
www.air.org