THE NATIONAL CENTER ON SCALING UP EFFECTIVE SCHOOLS

Building Adaptive and Resilient High Schools

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The National Center on Scaling Up Effective Schools (NCSU) is a national research and development center that focuses on identifying the combination of essential components and the programs, practices, processes and policies that make some high schools in large urban districts particularly effective with low income students, minority students, and English language learners. The Center's goal is to develop, implement, and test new processes that other districts will be able to use to scale up effective practices within the context of their own goals and unique circumstances. Led by Vanderbilt University's Peabody College, our partners include The University of North Carolina at Chapel Hill, Florida State University, the University of Wisconsin-Madison, Georgia State University, and the Education Development Center.

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Building Adaptive and Resilient High Schools

> Most schools stop at the point where they learn what others say works. They implement, but they don't collect and use evidence to see the effects of what they do (Leithwood, 2012).

Leithwood's comment suggests that the challenge of scaling up success goes beyond identifying and adopting effective models. Scaling up requires supporting schools to move past the "stopping point" of implementation to evidence gathering, progress monitoring, and, we would argue, readjusting and fine tuning efforts based on what that process reveals. Rather than a linear progression, this is an iterative cycle of continuous analysis, goal setting, implementation, reflection, and reassessment (Kowalski, Lasley, & Mahoney, 2008; Senge, 1998).

Background

Since 2004, the University at Albany School of Education's NYKids project has conducted best practice studies to identify what distinguishes "higher-performing" schools from demographically similar schools with average student performance. Higher-performing schools are defined as those in which students consistently perform at least one standard deviation above projected achievement on state high stakes assessments, and average-performing schools are those whose students consistently perform close to the mean. The study sample is also determined through multiple regressions of factors such as percentages of students qualifying for free or reduced-price lunch and percentages of English language learners. The final sample favors schools with higher challenges in terms of these demographic factors. Data are then gathered using a multiple case study method to identify practices that correlate with higher student achievement (Yin, 2005).

For example, in our 2008 high school study, the measure of student performance was three consecutive years (2005-6-7) of results from five mandatory high school state assessments: English, mathematics, science, global history, and U.S. history. Two-person research teams visited fifteen case study schools (10 higher-performing and five average-performing). At each site, they collected documentary evidence and interviewed district- and school-level administrators and teachers (177 in total), using a semi-structured interview protocol. This protocol incorporated a variety of questions regarding curriculum and academic goals; instructional programs and practices; approaches toward monitoring student performance; staff selection and capacity building; and strategies for recognition, interventions, and other arrangements such as scheduling.

Following the site visits, each team wrote an individual case study report that was checked for factual accuracy with school participants and then published on the project's web site (www.albany.edu/nykids). The interview and documentary evidence data from all study schools were analyzed using a constant-comparison approach to identify major differences between higher- and average-performing schools (Miles & Huberman, 1994). The following practices were identified as correlated with higher student

achievement in high school and described in an executive summary and full report. Although these key elements echo those identified by others who have synthesized findings across many studies of effective high schools (e.g., RMC Research Corporation, 2008; Harris, 2006; Hawley, 2007), we drew our elements from what we found in the schools we studied.

- Rigorous curriculum and expectations: High performance is expected from both teachers and students, with an explicit focus on providing typically lower-performing students with opportunities to succeed in higher-level (honors and AP) courses.
- Innovative instructional programs and practices: Teachers are encouraged to integrate new instructional programs and practices to impact student performance.
- Transparent communication: From developing plans and goals to reporting on student performance, educators invite participation and share information openly.
- Evidence-based decision making: Decisions around any new initiatives are based on an analysis of evidence from a variety of sources.
- Strategic targeting of resources: Resources, including personnel, are focused where they are most likely to best enhance academic performance (Wilcox, 2008; Wilcox & Angelis, 2011).

In addition to individual case studies and a cross-case report made freely available to all high schools in the state, we also web published a best practice framework. The framework includes brief descriptions of best practices, contrasts between average and higher performers, and hyperlinks to relevant documentary evidence collected from the higher-performing sites. Although the project made all resources available through means both passive (public website) and active (widespread distribution of print materials, presentations to multiple constituencies), advisors and funders urged additional efforts to help school leaders make use of the resources to change practice. These requests led to development of a toolkit and institutes designed to scale up effective practices to other high schools, including lower performers.

The toolkit is called “COMPASS” -- COMPare, Assess, Select levers to improve, and Set goals. Its 36-page workbook synthesizes study findings and guides users to set priorities, develop action plans, and set SMART goals (Doran, 1981) in light of the research findings. Drawing on the work of Kowalski and colleagues (2008), the COMPASS tool and initial two-day institutes focus on the first three stages of a five-stage problem-solving process:

1) framing and analyzing a problem;
2) identifying/selecting solutions;
3) applying solutions;
4) assessing/evaluating outcomes; and

5) refining solutions/repeating the cycle.

Shorter follow-up institutes guide participants through the remaining two stages.

To introduce high school educators to these resources, the project director and principal investigator formed a partnership with a school improvement association affiliated with the School of Education. The authors (principal investigator, project director, and association facilitator) developed activities for the institutes utilizing findings from prior research about effective high schools, including the project's own findings, and drawing on models of continuous improvement for systemic change (e.g., Fullan, 2007; Kowalski, 2009; Senge, 1998). Like these models, the goal of the institutes is to engage teachers and administrators in reflective, collaborative, inquiry-based activities that take a holistic view of how to impact student performance. The institute activities were developed not to replicate a general action planning process (cf. NASSP's Breaking Ranks) nor as an "adopt this model" approach, but rather, to ground a school leadership team's improvement efforts in what is known about best practices in combination with what could be a collective, attainable, and appropriate focus for each school.

In 2010, three high school and four middle school building leadership teams accepted invitations to attend a two-day summer institute in July. We considered the institute a pilot effort and collected data to assess the effectiveness and outcomes for participating teams. At their request, we reconvened teams of this initial cohort three more times from December 2010 – December 2011, each for a half or full day.

Conceptual Framework

All studies, including our self-study of the COMPASS implementation, rely on socio-ecological theory (Brofenbrenner, 1993) that envisions the components of any system as nested and interrelated, both influenced by and influencing other components. Thus we see student performance as related to multiple contextual influences or processes situated both inside and outside the classroom. Rather than simply assuming a direct causal relationship between classroom practices and student achievement, this perspective sees academic outcomes as resulting from educators' and students' stances and activities situated within a set of nested social structures or systems: a classroom nested in a school nested in a school district nested in a community nested in a state and national policy context. Figure 1 shows some of the aspects embedded in each of these component parts.

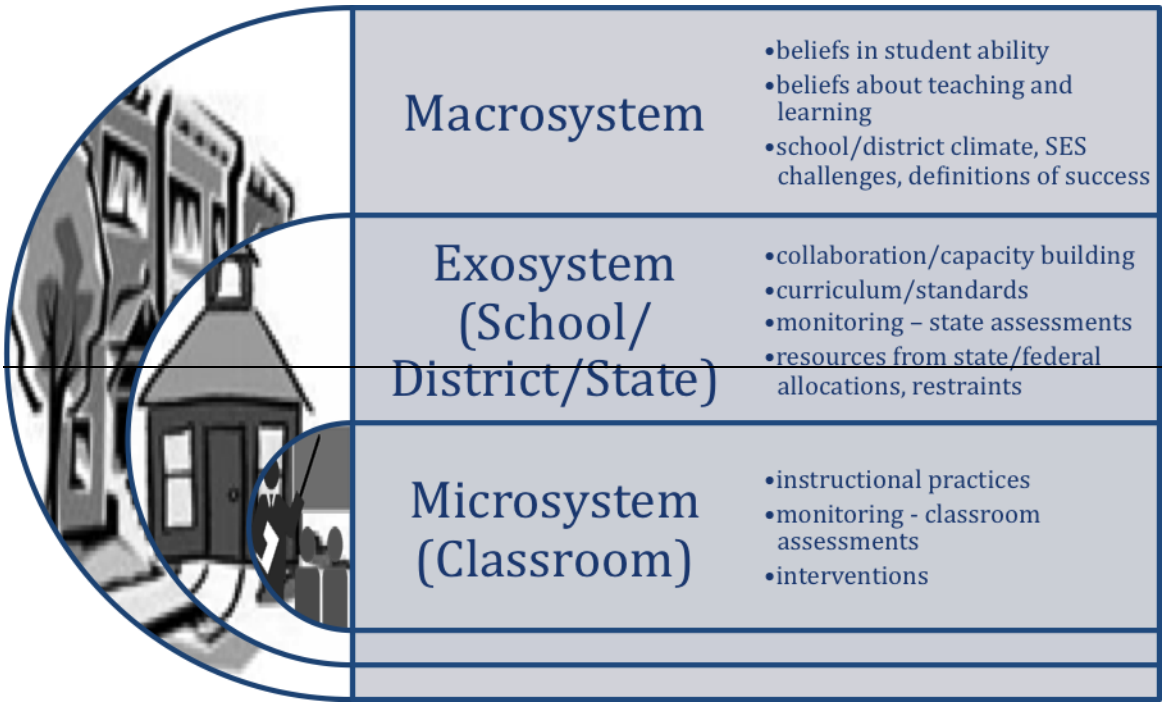

Figure 1. Socioecological Framework of School Systems

Our conceptual framework views student achievement outcomes as inevitably impacted by phenomena spanning all of these nested systems, and changes in these phenomena may appear unpredictable, nonlinear, and even threatening (e.g., changes in the content of state-required assessments, core curricula, and standards) – in other words, changing external demands may seem to add an element of chaos and complexity. As an explanatory framework for the behavior of complex and chaotic systems, we turn to rhizome theory, which was developed in the interdisciplinary work of philosophers Deleuze and Guattari (1980). In this framework fluctuations impacting a system are seen as triggering particular patterns of "evolution" or growth in adaptive and strong systems but may also trigger chaos, inertia, or a "death zone" in "brittle systems" characterized by weak or inflexible supporting structures.

Rhizome theory helps explain that, like the roots of an Iris (a rhizome), which grow in multiple, irregular directions and can regenerate if broken, healthy, sustainable systems are neither governed by command and control (a strong central organizing hub) nor are they completely self-organizing; rather they are dynamic -- able to adapt and respond to internal and external stimuli through networks of coordinated

resources. Each thriving system shares these characteristics (so there are observable patterns among them), but each individual system is also unique in its growth pattern depending upon external contexts as well as internal characteristics.

One of the challenges for those working in schools, then, is to identify ways to promote a school's capacity to be dynamic enough to balance stabilizing and destabilizing forces from outside and inside while organizing work in ways to synergize how each component part functions at the service of the whole. And the challenge for those working to scale up practices associated with positive student outcomes is to facilitate the use of research about more successful, adaptive systems that can then be applied in flexible ways to less well-functioning, or "brittle," systems.

Thus our conceptual framework includes two central components: a socioecological view of classroom, school and district as nested, coevolving systems embedded in a macrosystem of policies that infuse both resources and change into those systems (as illustrated in Figure 1). The second major component is the staging of a continuous improvement model that both directs school leadership teams toward shared goals (already associated with higher student achievement outcomes based on research) while exploring a variety of potential pathways to meet those goals. It incorporates ongoing reflection on how well adaptations/solutions are impacting movement toward those goals. It emphasizes the importance of understanding a system's status (weaknesses, strengths, resources) first and then focusing on components of the system that need the most attention in the effort to strengthen the entire system (Figure 2).

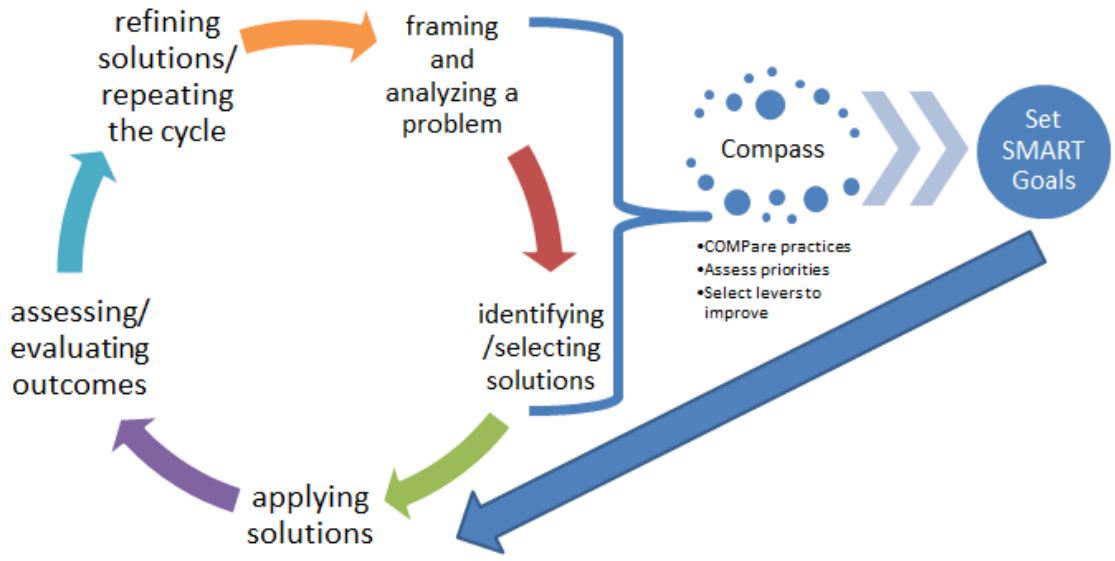

Figure 2: Socioecological Growth Model for School Improvement

The COMPASS tool and institutes that we have developed from this model marry research related to student achievement (i.e. identified and explained patterns of systems that effect desired outcomes)

(Wilcox & Angelis, 2011) with a continuous improvement process (Kowalski et al., 2008) that supports school building leadership teams to learn and internalize the process: participants, in essence, engage in re-patterning how their resources work as a system.

The framework also takes into the account theories of organizational change that account for the importance of resonance and relationships within communities of professionals (Fullan, 2010). There are three important aspects in this regard that inform our method of implementation: (1) working with cohorts of leadership teams from a variety of schools: this infuses diversity and rich dialogue across schools; (2) drawing on expert practitioner expertise from local (resonant) examples of best practice that are seen as credible; this models the workings of resilient systems in action; and (3) using team-building activities and protocols that re-pattern how individuals work together toward shared goals.

In sum, this socioecological growth model of school improvement takes into account that complex and chaotic systems, including schools, have underlying patterns, particularly in the ways that their components influence and are influenced by the overall system and the system, in turn, by outside forces. It is designed to improve school outcomes by supporting individuals within the system to draw on resonant pathways for adapting their work to align with the overall goal. We argue that both tacit knowledge and knowledge of research that resonates with educators and is used in cohorts of teams is needed to apply appropriate adaptations that are likely to be owned and therefore more successful in sustaining change.

The State Policy Context

Both the original best practice studies and the implementation study took place in New York State, which has been administering examinations as a standard for high school graduation since 1877. These are known as "Regents Exams" after the Board of Regents, the governing body for all schools in the state, preschool through professional. Until 2001 the requirements for taking and passing those exams had been fairly flexible and allowed for students to earn a local or the Regents Diploma (New York State Education Department, n.d.). However, in 2005 the Board of Regents began phasing in the requirement that all students must earn the rigorous, state-sanctioned –- or "Regents" –- diploma by passing five Regents Exams -- in English, mathematics, and natural and social sciences. By 2008, this requirement applied to all students entering grade 9, the only exceptions being students with disabilities, who if they fail a required state assessment must take the corresponding competency test in order to earn a local diploma (New York State Education Department, 2007).

Following the dictates of NCLB, the New York State Education Department began monitoring and reporting results on the ELA and Mathematics Regents Exams disaggregated by subgroups. The result was that by 2010, many high schools in the state were identified as failing to make adequate yearly progress, particularly for ethnic and linguistic minorities, students qualifying for free or reduced-price lunch, and/or those in need of special education services. At the same time, schools across NYS were experiencing an increase in the number of students in these groups.

Testing the Tools

Of the high school teams that responded to our initial invitation to attend a summer institute, two of the three were urban and one suburban, albeit with increasing numbers of students migrating in from poor urban centers on either side. Their building leadership teams were in various stages of forming: the suburban school's team of principal, department chairs, and teachers worked well together and demonstrated shared leadership. One urban high school, Echo High School, reported a recent "storming period" (Tuckman, 1965) as they and the rest of the faculty confronted the reality of their achievement gap; they had recently undergone a state review as a result of consistently poor performance by Hispanic, low SES, and special education students. Some faculty expressed feeling unprepared to address the problem by teaching classes of mixed ability and performance levels and were reluctant to do so; others expressed dismay at the unacceptable size of the gap, perceiving it as "immoral." And the third high school, also urban and at risk of identification for low performance, sent a new principal and assistant principal to learn the process to bring back to their leadership team. To date the strongest impact has been with Echo HS, which we use as an example to demonstrate the potential for the COMPASS approach. In the final section of this paper we share some of what we have learned from our study of implementation to date.

Echo High School's Journey

When the EHS team arrived at the initial institute (July 2010), 52 of the school's 89 professional staff had taken an on-line self-assessment to compare their practices to those in the higher-performing high schools in our study. On a 4-point scale where 4 = more like the practices in higher-performing schools and 1 = more like practices in lower performers, EHS' average score across the five best practice themes was 2.68. This score indicated that they assessed their practices somewhere between those typical in average-performing schools and higher-performing schools. The scores in each of the categories of best practice are displayed in Figure 3.

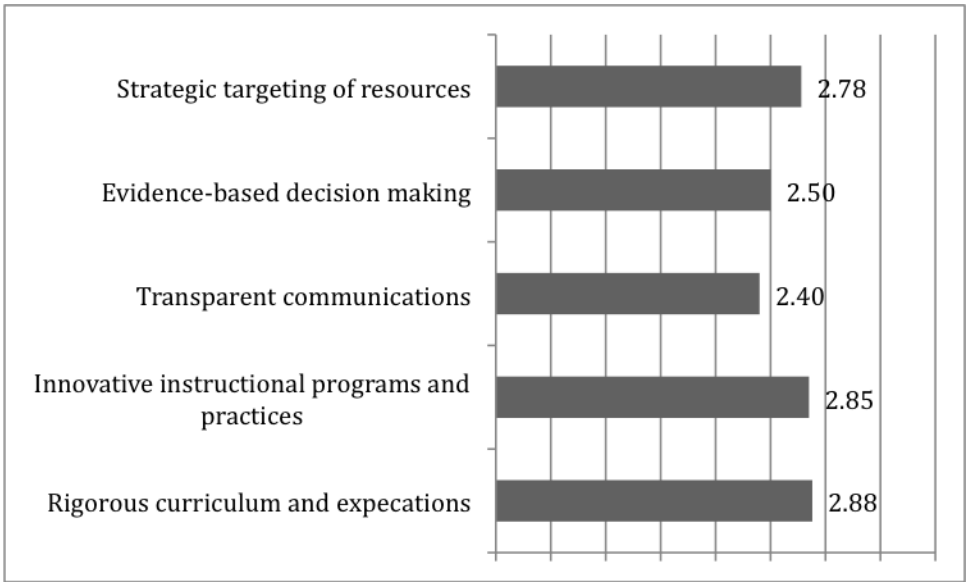

Figure 3. EHS Scores on Elements of High School Best Practice

Although evidence-based decision making was not their lowest score, taking into account the particular context of their school, the EHS COMPASS team decided that they "didn't know what they didn't know" and chose to start by focusing on that theme of best practice. At the conclusion of the first two-day institute, the team did not think they were yet capable of writing a goal related to evidence-based decision making that was measurable or time bound. They were committed to using evidence but were not yet clear on which evidence and how to make it suit their purposes. As the principal explained, there are so many data, getting your arms around them "is like wrestling with a mattress." Therefore they wrote a goal that they saw as a preliminary or interim step: to "develop the infrastructure to identify, collect, and utilize data to improve student achievement." They knew where they were headed.

In August, led by the principal, the EHS team began to "wrestle with that data mattress" using the lens of a cohort. They developed two SMART Goals for the cohort of 2007 (the class that would graduate in 2011), both to be measured by state report card results: 1) "To attain the annual measurable objectives for all students in ELA and math" and 2) "To attain the safe harbor targets for Hispanic/Latino, students with disabilities, and economically disadvantaged students in ELA and math."

By March 2011, the EHS team reported success in working with colleagues to focus on the progress of each individual student and measuring progress through the lens of each class cohort. Examples they shared included using more diagnostics in math and English in order to target support where students needed it, working with students and families to encourage students to sit for the Regents Exams required for a Regents Diploma, differentiating instruction and offering after school tutoring, even offering breakfast to all students on the morning of Regents Exams. The ELA and math coordinators also reported that teachers in their departments were starting to look critically at their curricula and were becoming more open to change.

In August of 2011, independent of any university involvement, the EHS principal reconvened the team to measure progress. In that first year the school had met four of the eight targets the team had set and missed one by only 4 points. See Table 1.

Table 1. EHS Progress toward Goals after 1 Year of Participation in COMPASS

Group	ELA	Math
All students	AYP	4 points shy
Hispanic	Safe harbor	Safe harbor
Economically Disadvantaged	AYP	Not met
Special Education	Not met	Not met

With these and other performance data in hand, the team decided to refine its goal related to evidence-based decision making and, drawing on what they had learned from the higher-performing high schools, add transparency as a priority area, the area on which their self-assessment had scored lowest (Figure 2). They formed groups to draft a SMART goal for each. The evidence-based decision making group drafted: "Increase the percent of students eligible to sit for the June 2012 Living Environment [Regents] Exam (science department)." (The Living Environment Exam meets the requirement of passing at least one state science assessment.) The transparency group wrote two goals:

- "Curriculum maps will be actively used, including rigorous assessments that drive instruction to improve student achievement by June 2012 (Inquiry Team).
- Parents of students who receive failing comments on the Interim Report will be contacted by the child's teacher to discuss strategies for improvement (Parent Outreach)."

The inclusion of the science department, inquiry team, and parent outreach groups indicate that the continuous improvement, goal-setting process was becoming more fully integrated into the school.

As education budgets across the state and nation shrank, Echo High School did not escape. The school lost 10.5 teachers in the 2010-11 school year as well as district support for the busing that had provided transportation for students staying after school for tutoring. Yet the teachers and administrators report that they have been able to maintain their focus on their goals by not making excuses for what was beyond their control and focusing on what they can do. They have made strategic decisions on curriculum development, alignment with the Common Core State Standards, and professional development to support differentiated instruction and cooperative learning. The principal (personal communiqué, November 2011) credits the capacity-building distributed leadership and COMPASS process for keeping

them on task and faithful to the goals they set.

Preliminary Findings All Schools

Based on survey results, with very few exceptions, all participants have found the COMPASS Tools and Institutes useful or very useful. Over time, the needle has also moved from useful to very useful, with nearly 20% more participants ranking both the tools and institutes as very useful when they reconvened in December of 2011 than they had in December the year before. See Figure 4.

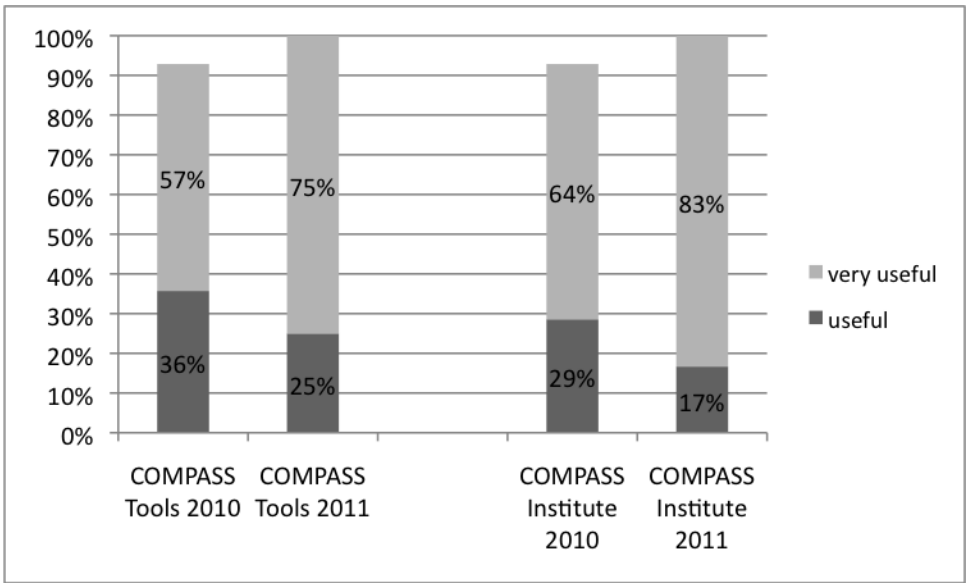

Figure 4. Participants' Evaluations of the Usefulness of the Tools and Institutes

In terms of capacity building, participants' assessments of the COMPASS' impact on their ability to develop, implement, integrate, and sustain more effective practices gained strength over the same period, with the strongest gains in their own ability to use processes of evidence-based decision making, set SMART goals, plan action steps and evaluate progress (Figure 5).

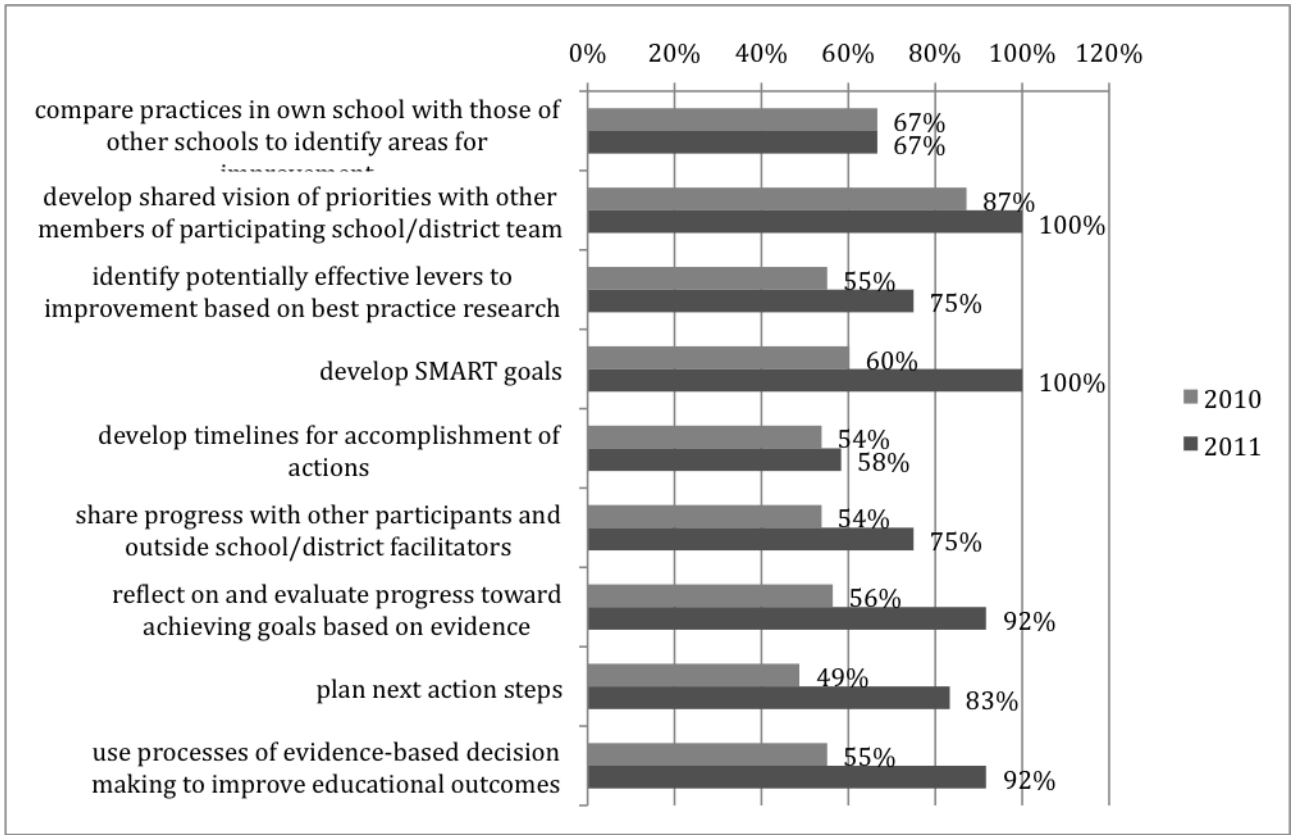

Figure 5. Participants' Assessment of Ability to Sustain a Continuous Improvement Process

In response to the question (posed in December 2011), "Have the COMPASS process and/or other project resources made a difference in your school? Yes or no. Please comment," all but one respondent said "yes," and that individual commented, "I believe that we are still in the development phase on how best to utilize the process." Other comments mentioned, in particular, how the COMPASS was responsible for fostering "forward motion" and "growth" (50%); bringing building-wide coherence to their efforts (67%); using data for goal setting (50%); and better focusing their initiatives (67%).

Within one year of their initial participation the high school teams participating in the COMPASS project were showing signs of a sustainable reculturation in their buildings. This reculturation was characterized by changes in the ways educators worked together in teams, adjustments to how and how often teams used evidence to inform their work, and how collaboration was being approached vertically across their districts. For example, one principal reported that the SMART goal process embedded in the COMPASS Tool and Institutes gave needed focus to the school's loosely organized professional learning communities, shifting the ways they collaborated in their teams. As an example of changes in approaches toward evidence-based decision making, the EHS principal, independent of any outside facilitation, led his team to assess outcomes to date and begin to refine goals and repeat the problem-solving cycle. And, based on their analyses of a variety of evidence, at least two of the three high school teams have increased

efforts to influence the larger system by initiating district-level discussions about providing more support for at-risk students well before they reach high school.

What We Have Learned

A recent international study found that schools in various stages of improvement need different approaches (Mourshed, Chijioke, & Barber, 2010) depending on what stage they are in – e.g., moving from poor to fair, fair to good, or good to great. Yet that report also cautions that schools cannot continue to improve by doing what brought them past success. This suggests that, as in our experience, lateral learning (school teams learning from each other in cohorts) can be significant. One might expect that lower-performing urban schools have much to learn from average-performing suburban schools, and we found that to be the case. But the suburban educators also realized that their urban colleagues had experience with the very students providing them with challenges – the urban newcomers – and that they could learn from those who generally face more challenges on a regular basis. As one group of teachers reported, "If they can do it, then we should be able to do it, too."

Among the other lessons learned:

- The preparation and configuration of a team differs depending upon the school context. Ideally, a team represents a cross-section of the school (by grade level, department, role) and is composed of individuals who are invested with the confidence of colleagues and administrators.
- The COMPASS entry point for each team also differs depending on the relationships and patterns of behavior already existing in their contexts. Some teams, for example, require little team-building assistance while others need more assistance during an initial institute to build relationships and develop protocols for moving their work forward.
- Resonance and credibility are important to educators, so learning/hearing from other educators who have tacit knowledge about using best practices is important. As speakers and/or cofacilitators, educators from higher-performing schools provide inspiration, concrete examples, and professional networks to consult as needed.
- With regard to high schools, the institutes encourage the capacity (through protocols and tools) to look beyond their school to the entire district to influence the preparation of entering students.
- The COMPASS Tools and Institutes support school principals in sharing leadership yet taking initiative to lead the change process; this may be unfamiliar territory and requires expert facilitation.

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