The Skillful Data Team:
Four Essentials for Improving Teaching and Learning

By Nancy Love, Mary Ann Haley-Speca, and Deborah Reed

"If you want to lift ten pounds, you can do it yourself. If you want to lift two-hundred pounds, you'd better have a team." So goes an old adage. Bringing each and every student in our schools to high levels of achievement is like lifting a very heavy weight. It takes a team. In this article, we highlight one type of team—the data team—that is successfully driving school improvement, and we describe essential practices for translating team time into better teaching, greater equity, and increased achievement.

Skillful Data Teams in Action

Building on Katzenbach and Smith's definition of teams, we define a data team as "a small number of people [4-8] with complementary skills [content, pedagogy, data] who are committed to a common purpose [improving teaching and learning and closing achievement gaps], performance goals, and approach [collaborative inquiry—testing out solutions to student-learning problems through data analysis and reflective dialogue] for which they hold themselves mutually accountable" (Katzenbach & Smith, 1994, 45, with bracketed additions by the authors).

T - Take time to build the foundation
E - Engage in data-driven dialogue
A - Act together to improve instruction
M - Monitor implementation and results

Typically, elementary teachers are organized into data teams by grade levels, middle schools by teachers at the same grade level teaching the same subject (e.g., 7th-grade mathematics), and high schools by teachers teaching the same course (e.g., physics or American history) (see Figure 2). Variations are possible for different sized schools. Specialists participate by rotating among relevant teams or forming their own teams.

In our work with data teams in Massachusetts and across the country, we have observed that high-functioning teams, those whose impact is felt immediately and directly on students and their learning, put four essentials (T-E-A-M) into practice.

T—Take time to build the foundation

One critical thread common to high-functioning data teams is their appreciation of the challenges the work can present and therefore the investment they make initially—and revisit regularly—to build a strong foundation as a team:

- A clear and shared understanding about purpose, roles, responsibilities, and process
- Agreements about values (especially regarding the right of all students to achieve at high levels), standards, collaborative norms, and student-learning goals
- Ongoing commitment to strengthening their cultural proficiency—knowledge and beliefs that enable them to work on behalf of and respond effectively to the diversity of learners they serve
- Development of collaborative inquiry knowledge and skills

Teams we work with discover how critical it is to make a regular habit of assessing and monitoring their norms of interaction, their adherence to agreed-upon protocols, and the alignment of their actions with espoused values. Teams who do this are less likely to blame students and their backgrounds for achievement gaps, more likely to take on difficult but necessary conversations about cultural attitudes that may be harmful to students and their achievement, and quicker to recognize and right their course

when they are getting derailed or drawing conclusions without testing assumptions. The ultimate payoff is in the team's overall productivity.

E—Engage in data-driven dialogue

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Data-driven dialogue is a four-phase protocol for having powerful and focused conversations about a variety of student-learning data, including those most frequently analyzed in teacher data teams: formative common assessments, such as mathematics problems of the week, writing prompts, reading responses, or science journals that teachers administer and analyze together (see Figure 1). The protocol enables teams to reach a collective understanding of the data. The phases, with illustrative vignettes, are:

(1) Predict:
Before the 7th-grade English team looks at the results of the mid-year common writing assessments, the team makes some predictions and formulates assumptions about what they will see in the data. This phase helps gets them ready to learn from the data. One teacher predicts that there will be better scores on organization due to the consistent use of graphic organizers for pre-writing. Another predicts scores on conventions might be lower because teachers have been focusing feedback primarily on organization. Another suggests that conventions might improve because of use of focus corrections.

(2) Go Visual:
The data team "goes visual" by creating large, vibrant, color-coded bar graphs that compare previous scores in their six-traits of writing rubric to these results.

(3) Observe:
The team gathers around the graphs, setting aside assumptions while focusing and commenting only on what the data reveal. One says, "I'm noticing that forty-two percent of our students scored at least one point higher than last time on organization, but half of those showed no gain in conventions."

Figure 1
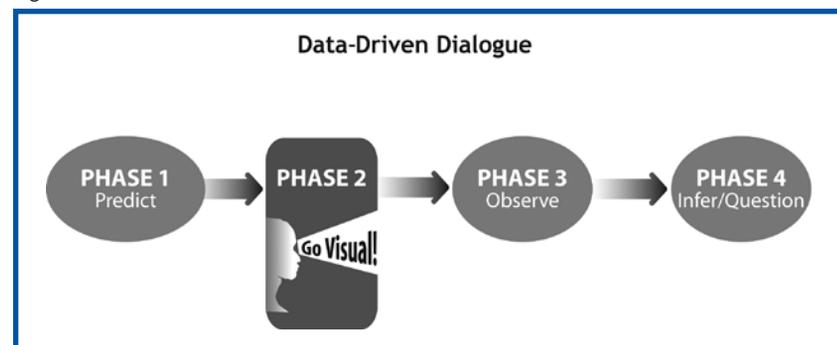
Source: The Data Coach's Guide to Improving Learning for All Students: Unleashing the Power of Collaborative Inquiry (p. 73), by N. Love, K. E. Stiles, S. Mundry, and K. DiRanna, 2008, Thousand Oaks, CA: Corwin Press. Adapted from Data-Driven Dialogue: A Facilitator's Guide to Collaborative Inquiry, by L. Lipton and B. Wellman, 2004, Sherman, CT: Mira Via, LLC.

(4) Infer/Question:
Finally, the team engages in dialogue, generating possible explanations, inferences, questions, and implications for reteaching based on their observations. "Those graphic organizers and clear criteria seem to be working." "I wonder what the graphic organizers look like for the students who aren't showing gains." "Have we been letting up on holding students accountable for conventions and emphasizing focus correction areas?"

A—Act together to improve instruction

Drawing on the work of Saphier, Haley-Speca, and Gower (2008), Tom Guskey (2007/2008), and others, data teams pinpoint specific teaching strategies of targeted concepts and skills to individual students and explore how to (1) teach in a different way; (2) engage the learner in a different way; (3) align reteaching to the essence of the error or confusion; (4) challenge students with more complex tasks; and (5) help struggling students through tutoring before, during, or after school and other interventions.

Having analyzed the types of errors students made in the last three problems of the week, a 4th-grade data team decides to use small-group instruction with a few targeted students to have them think aloud as they approach a problem; to explicitly teach a relevant nonroutine problem-solving strategy each week and assign a problem each day for practice of the strategy; and to develop more relevant problems by challenging some students to "update" the problems using context that better represents their world.

M—Monitor implementation and results

Data teams commit to a particular teaching strategy and then monitor its implementation, its impact on identified achievement gaps and goals, and the effectiveness of their own team process.

> *The 4th-grade data team studies the next three problems of the week, agrees on problem-solving strategies to teach each week, and divides the task of locating or creating a bank of daily practice problems for each strategy. They keep track of the time spent on small-group instruction with targeted students and share their discoveries regarding student difficulties when they meet in common planning time; they select a common assessment problem to administer in the fourth week and bring (ungraded) to their next data team meeting. At that meeting, they make predictions about what they expect to see in the work, analyze the work of the students who previously had the most difficulty, and make observations and inferences based on what they have tried and what the results show. They assess the value of their strategies and decide whether, where, and how to make adjustments.*
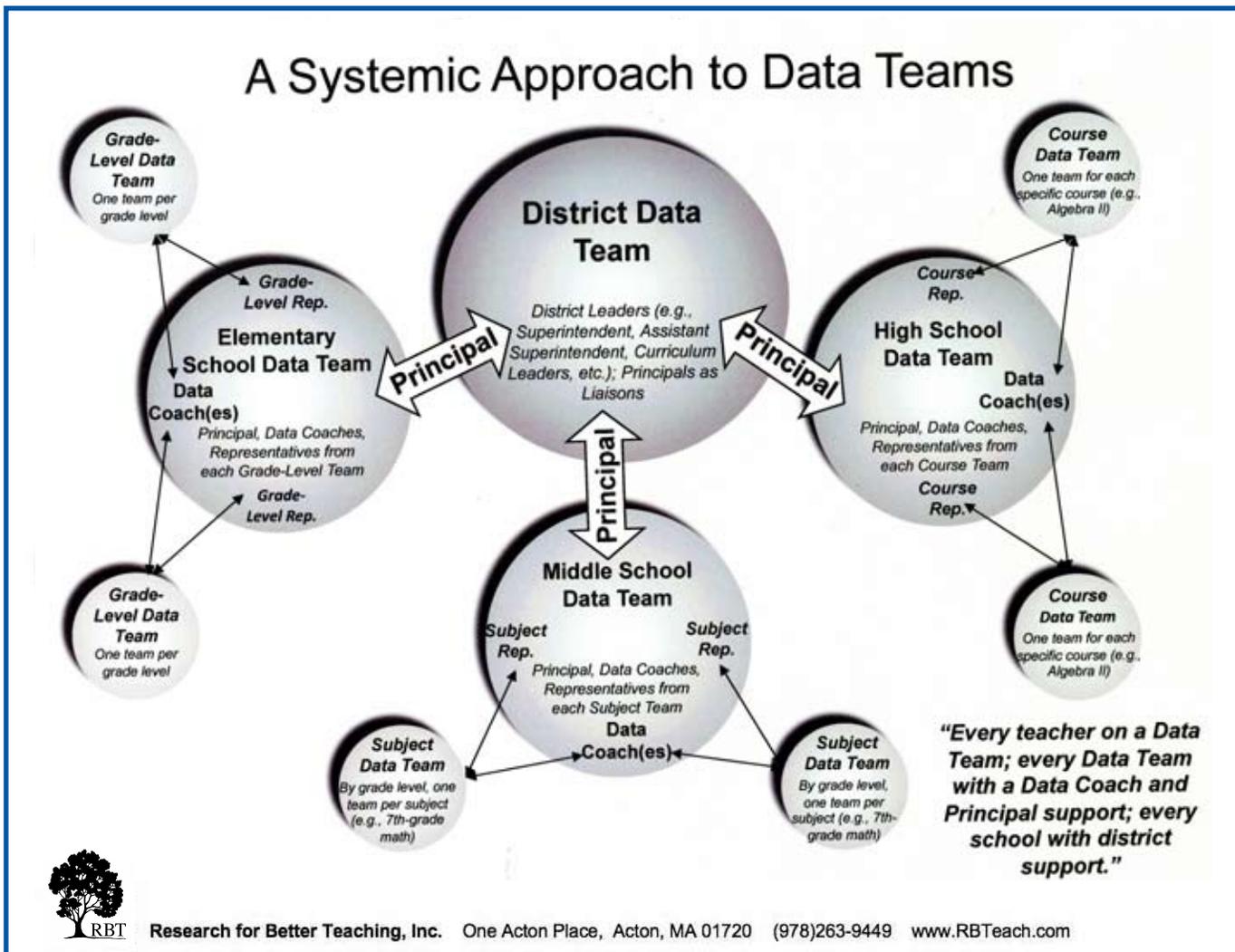

Figure 2

Growing Skillful Data T-E-A-Ms

For data teams to grow into the school improvement powerhouses they can be, they must be carefully nurtured and developed as part of a well-coordinated system from the district to the school to the classroom (see Figure 2). First, district and school leadership must find the will to break persistent norms of isolation by establishing data teams and providing time for them to meet during the school day (ideally 45 minutes/week). Then they focus on building the capacity of teachers and administrators to make the most of their team time by putting the four essentials into action. For example, they provide high-quality professional development for data teams and data coaches. In addition, district leaders work together as a district data team, honing and modeling the practices they expect teachers to use as they analyze district data and develop, carry out, and monitor district improvement plans. They also act as coaches for building principals, convening them regularly for problem-solving and sharing best practices in facilitating teacher collaboration.

Principals are other linchpins in the support system for data teams. They actively participate in the school-wide data team, which focuses on analyzing school data and school improvement while coordinating and sustaining the work of the teacher data teams. Principals walk a fine line between the active encouragement of progress and the supportive provision of resources while delegating leadership of data teams to teacher leaders or data coaches, a new leadership role that many schools are introducing.

Data coaches are specially trained teacher-leaders and administrators who "guide data teams through the process of collaborative inquiry and influence the culture of schools to be ones in which data are used continually, collaboratively, and effectively to improve teaching and learning" (Love, Stiles, Mundry, & DiRanna, 2008, 20). They are not just experts in data analysis. They act as facilitators, equity advocates, and school improvement specialists, helping to spread data literacy and collaborative inquiry skills to teacher teams. A study of the Using Data Project, a National Science Foundation-funded initiative to develop data coaches, documented achievement gains in participating schools and found that the data coach's role was key to sustaining a professional community (Zuman, 2006).

Putting all the pieces in place—so that every student has a skillful teacher, every teacher is on a high-functioning data team, and every data team has the support of a data coach, building principal, and district leadership—does not happen overnight. Some schools start by establishing a school-wide data team and training three data coaches, including the principal. Others implement teams at just one or two grade levels or in one or two subject areas and build slowly. But the task before us—raising our students' achievement, lifting our expectations, and elevating our schools—is too important not to start the "heavy lifting" now!

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