
Introduction

The purpose of this monograph is to make widely available vital lessons about how schools can use data effectively to meet the immediate and pressing need to improve results for students. We wrote it because we want our readers to turn the challenges of accountability into our greatest opportunity to prevent yet another generation of failure.

THE CHALLENGE AND THE OPPORTUNITY: MARSHALING DATA AS A FORCE FOR SCHOOL IMPROVEMENT

Despite decades of reform, achievement gaps¹ persist at the same time that accountability pressures and sanctions for failure are increasing. Schools know they *have* to improve. The question is *how*. Simply having more data available is not sufficient. Schools are drowning in data. The problem is marshaling data as the powerful force for change that they are.

Without a systemic process for using data effectively and collaboratively, many schools, particularly those serving high-poverty students, will languish in chronic low performance in mathematics, science, and other content areas—no matter what the pressures for accountability. Or even worse, abuses of data—drilling students on test items; narrowing the curriculum; tutoring “bubble” students while failing to improve instruction; instituting practices that further exclude, label, or discriminate against students of color—will leave underserved students even worse off. As Richard Elmore (2003) says, “When we bear down on testing without the reciprocal supply of capacity . . . we exacerbate the problem we are trying to fix” (p. 7).

¹It is with ambivalence and because we are still searching for a better term that we use the phrase “achievement gap” throughout this book. Achievement gap refers to the differences in testing performance among student groups, but it fails to describe the legacy of exclusivity and institutional racism in the United States that contributes to these differences.

On the other hand, these very same conditions—widespread availability of data and the pressure to make use of them to improve results—create the possibility for immediate, dramatic, and permanent improvement in student learning and the closing of persistent achievement gaps. The research is unequivocal: When schools build collaborative cultures, commit to all students' learning, and use data systematically through ongoing inquiry into improving instruction, they improve results for students (Elmore, 2003; Loucks-Horsley, Love, Stiles, Mundry, & Hewson, 2003; Louis, Kruse, & Marks, 1996; Love, 2004; McLaughlin & Talbert, 2001; National Staff Development Council, 2001).

This monograph is about schools that are solving the problem of *how* to improve. The schools that inspired this monograph have close to doubled the percentage of African American students proficient in mathematics over a three-year period; virtually eliminated the achievement gap between students with disabilities and regular education students; cut the failure rate of Native American children in half; and steadily improved mathematics, science, and reading results for all children. It is not that these schools do not face daunting problems: historically low achievement (one school did not have a single student passing the state test a few years ago), lack of resources, poor attendance, high teacher turnover and student mobility, and more. But in the face of these, teachers have become problem solvers by putting data to work *for* students and applying the science of continuous improvement.

THE POWER OF COLLABORATIVE INQUIRY

The improving schools discussed in this book do not just throw data at teachers and say, "Now do better." They systematically prepare teachers to

Using data to guide action is the most powerful lever we have to improve schools; and yet, despite the increasing quantity now available, data are woefully underutilized as a force for change.

—Nancy Love, Katherine E. Stiles,
Susan Mundry, and
Kathryn DiRanna (2008, p. 16)

engage in collaborative inquiry, a process where teachers construct their understanding of student-learning problems and embrace and test out solutions together through rigorous use of data and reflective dialogue. They attend to teachers' ongoing professional learning in how to both understand and respond to data. Teachers learn not just to be data literate but to draw on deep knowledge of content and how to teach it and on an

abiding belief in the capacity of all children to learn. Data Teams become vital centers of collaboration, meeting weekly to examine common and

formative assessment data, improve their teaching, monitor results, and share their successes. Classrooms are transformed into living laboratories, alive with learning for both students and teachers.

When teachers are organized and prepared for engaging in ongoing collaborative inquiry, data assume their center-stage role in improving teaching and learning. They sound the alarm that someone is not learning and activate an immediate response. They stimulate dialogue about teaching, curriculum content, learning, race/ethnicity, class, and culture and challenge us to rethink our assumptions. They hold a mirror up to instructional practice and provide constant feedback to guide instructional improvement. In short, they become one of the most powerful levers we have for better serving all students.

Three Findings About Collaborative Inquiry

This monograph will introduce collaborative inquiry to you and highlight three important findings about it:

Collaborative inquiry continuously improves teaching and learning. The first finding is that collaborative inquiry has the power to solve the biggest problem confronting schools in the era of accountability: how to continuously improve teaching and learning. Unleashing the expertise and creativity of teachers, collaborative inquiry is truly one of the great, untapped resources for school improvement. You will see evidence of this in Chapter 1 in the discussion of results and in case studies in Chapters 5 and 6.

Collaborative inquiry requires wholesale cultural change. A second important finding is that collaborative inquiry is easier said than done; it requires wholesale cultural change in schools. Its foundation is a collaborative culture characterized by collective responsibility for student learning, commitment to equity (the right of all students to achieve at high levels), and trust. In the absence of such a culture, schools may be unable to respond effectively to the data they have. Chapter 1 describes this culture in more detail, and Chapters 2 and 3 provide more practical guidance about how to establish such a culture, while Chapters 5 and 6 paint a picture of what school culture looks like in schools where collaborative inquiry is thriving.

Collaborative inquiry is based on more than data. The third finding is that using data in itself, even in the context of collaborative inquiry, does not automatically improve teaching and learning. Improved teaching comes about when teachers implement sound teaching practices grounded in cultural proficiency—understanding and respect for their students’

cultures—and a thorough understanding of the subject matter and how to teach it. Chapter 1 describes the core competencies for effective data use, and Chapter 4 elaborates on the critical importance of bringing a culturally proficient perspective to data use and collaborative inquiry.

AUDIENCE

This monograph is written primarily for school or district administrators and teachers who want to make more effective use of school data to continuously improve teaching and learning. It is also intended for anyone interested in school improvement, including department of education personnel, policymakers, boards of education, parents, higher-education faculty, and those providing professional development and other services to schools. It is relevant to any school—whether serving affluent or poor students, whether high- or low-performing—where any students are achieving at less than their capacity. Although our examples come mostly from mathematics and science education, the monograph is applicable to school improvement in any content area and at any grade level, K–12. Finally, the monograph’s contents are geared to readers who are just embarking on establishing a high-performing, collaborative school culture as well as to those who are further down that road.

OUR GOALS

Our intention is for this monograph to

- help you turn the challenges of accountability into our greatest opportunity to prevent yet another generation of failure,
- act as a catalyst to dialogue and inquiry into how to use data to improve teaching and learning,
- inspire you with examples of schools that are improving.

We want to share with you what we have learned through experience about how to meet the challenges of accountability. Specifically, the book will

- articulate a theory of action, collaborative inquiry, and the essential, logically linked steps that connect data use to improved results for students;
- describe one model for school improvement, the Using Data Process of Collaborative Inquiry, which has been nationally piloted and field-tested with promising results;

- provide a rationale, conceptual framework, and practical tools for bringing a culturally proficient perspective to data use and collaborative inquiry;
- create vivid descriptions of collaborative inquiry in action, teasing out essential and broadly applicable elements of success;
- offer ideas and frameworks to expand your thinking about school improvement, data use, and equity.

THE USING DATA PROCESS OF COLLABORATIVE INQUIRY: THE GENESIS OF THIS MONOGRAPH

This monograph grew out of a three-year National Science Foundation–funded project, the Using Data Project, a collaboration between TERC and WestEd. The project set out to develop, pilot, and field-test a program, now known as the Using Data Process of Collaborative Inquiry, to provide educators with the skills, knowledge, and dispositions to put school data to work to improve teaching and learning. The goal of the project was to prepare education professionals to serve as Data Coaches, who would lead a process of collaborative inquiry with school-based teams and influence the culture of schools to be one in which data are used continuously, collaboratively, and effectively to improve teaching and learning.

Even the developers of the program, who had promised to improve student learning in their National Science Foundation grant proposal, were stunned by the results produced in schools implementing the Using Data Process: dramatic improvements in student learning and narrowing of achievement gaps as well as important changes in school culture. With their collective eighty years of school improvement experience, nothing project staff had done had ever made such a difference. The National Science Foundation supported this monograph as one vehicle for widely disseminating the findings from the project that could benefit the field. Another product of the grant, *The Data Coach's Guide to Improving Learning for All Students: Unleashing the Power of Collaborative Inquiry* (Love et al., 2008), is a step-by-step guide for implementing the Using Data Process with Data Teams. Chapters 1, 2, 3, and 6 of this monograph are largely based on material from this guide.

The editor and contributors to the monograph have had the chance to experience the power of the Using Data Process firsthand. They are the staff of the Using Data Project, professional developers who worked with diverse schools—urban, suburban, and rural, K–12—across the country to implement the Using Data Process. They are district leaders who created the conditions for successful implementation and teachers and administrators who brought collaborative inquiry to life in their own schools.

Finally, they are experts in cultural proficiency who helped Using Data Project staff and participating schools think about how to bring an equity lens to data, using it as a catalyst for constructive dialogue about cultural diversity and expanding opportunities for learning to underserved students. Through all of these authors' voices, the monograph draws out lessons that can accelerate the possibilities for data use in school improvement on a large scale.

ASSUMPTIONS INFORMING THIS MONOGRAPH

The following assumptions inform the perspective of this monograph:

Assumption 1. Making significant progress in improving student learning and closing achievement gaps is a moral responsibility and a real possibility in a relatively short amount of time—two to five years. It is not children's poverty or race or ethnic background that stands in the way of achievement; it is school practices and policies and the beliefs that underlie them that pose the biggest obstacles.

Assumption 2. Data have no meaning. Meaning is imposed through interpretation. Frames of reference—the way we see the world—influence the meaning we derive from data. Effective data users become aware of and critically examine their frames of reference and assumptions (Wellman & Lipton, 2004, pp. ix–xi). Conversely, data themselves can also be a catalyst to questioning assumptions and changing practices based on new ways of thinking.

Assumption 3. Data encompass much more than state test results. Data are all of the compelling evidence that grounds conclusions in actual results, not speculation. In this era of accountability, it is important not to rely on single and imperfect measures of student achievement as the basis for decision making about schools, instructional improvement, or students. It is equally important to “measure what we treasure,” the rich array of knowledge and skills we want students to acquire to be productive global citizens, which often go beyond what is assessed on state tests. Appropriate uses of data call for educators to set meaningful goals for student learning and use multiple measures to assess progress toward those goals, including formative assessments, analysis of student work and thinking, disaggregated student-learning data, and data about instructional and school practices and perceptions. Collaborative inquiry is only as robust as the relevance, accuracy, fairness, variety, and reliability of the data in use.

Assumption 4. Every member of a collaborative school community can act as a leader, dramatically affecting the quality of relationships, the school culture, and student learning.

Assumption 5. When teachers learn and apply knowledge and skills linked to student-learning goals, students learn more. Ongoing, high-quality professional development that is part of the school day, guided by data, linked to teacher practice, and embedded in a professional community is the lifeblood of collaborative inquiry and school improvement.

HOW THE MONOGRAPH IS ORGANIZED

This monograph is divided into two sections. *Section 1: Collaborative Inquiry* includes Chapters 1 through 4. This section describes the soil in which effective uses of school data can grow: a high-performing collaborative culture characterized by ongoing collaborative inquiry to improve student learning. Readers will learn

- why such a culture is critical to linking data use to improved results,
- how to create the conditions for it to take hold,
- what kinds of data to use and how often,
- the salient features and stages of a model for collaborative inquiry,
- how to bring a culturally proficient perspective to data use and school improvement.

Chapter 1: Building a High-Performing Data Culture describes major shifts in leadership, collaboration, data use, instructional improvement, and school culture that take place as schools move toward collaborative inquiry and high performance. It highlights the role of the Data Coach, a school leader who is specially trained to guide collaborative inquiry. Together all these shifts comprise the theory of action for moving schools from resignation to high-powered uses of data and results.

Chapter 2: Getting Organized for Collaborative Inquiry discusses how school districts and individual schools seed the soil for successful implementation of collaborative inquiry. It answers the following practical questions: How can collaborative inquiry be integrated into your existing improvement efforts and with other initiatives? How do you build support among key people? Organize Data Teams? Select and prepare Data Coaches? Create time for collaboration? Ensure timely access to robust local data? Based on lessons learned through the Using Data Project, these are the conditions that can make or break the success of collaborative inquiry.

Chapter 3: The Using Data Process: A Model for Collaborative Inquiry describes the Using Data Process, the model for collaborative inquiry developed and field-tested through the Using Data Project. Like inquiry-based instruction in the classroom, collaborative inquiry works best, the developers learned, when teachers have a model to follow—a sequence of steps that guides the inquiry and helps to assure productive dialogue and results. The Using Data Process organizes collaborative inquiry into the following five stages: building the foundation, identifying a student-learning problem, verifying causes through use of research and local data about practice, generating solutions by drawing on research and using a Logic Model, and implementing solutions while monitoring implementation and results. This chapter provides the rationale and describes the essential features of each stage along with practical tools and real-life examples.

Chapter 4: Bringing Cultural Proficiency to Collaborative Inquiry contends that one of the most important things Data Teams can do is develop their knowledge and skills of cultural proficiency and apply them to their work. Authors Brenda CampbellJones, Franklin CampbellJones, and Nancy Love define cultural proficiency as a framework for expanding our notions of diversity, viewing our students' various cultures as a source of strength, and bringing an equity lens with these perspectives to data analysis. They offer practical tools for sharpening our equity lenses, including the Cultural Proficiency Continuum, which describes a range of responses an individual or organization might have to cultural differences.

Section 2: Stories From the Field brings in the voices of practitioners with two case studies:

Chapter 5: A District Uses Data to Improve Results: Johnson County, Tennessee, is the turn-around story of the Johnson County School District, a small, rural, and historically low-performing system with 75 percent of students on free-and-reduced lunch. Coauthored by Johnson County's former Supervisor of Instruction, Dr. David Timbs, this chapter brings to life the theory of action described in Chapter 1, tracing how this school system built the bridge between data and results. The case illuminates the role district leaders play in establishing the conditions to implement and sustain continuous improvement. It also draws out actions taken to dramatically improve the performance of students with special needs.

Chapter 6: A Data Team Problem Solves About Problem Solving: Clark County, Nevada, tells the story of one Data Team's application of the Using Data Process to tackle the problem of students' poor performance in mathematics problem solving. Written by teachers and administrators in Clark County, Nevada, this case follows the Katz Elementary School Data Team

as they build their foundation, identify a student-learning problem, verify causes, and generate solutions to achieve results in mathematics problem solving. You will discover how the Data Team revised their initial explanations of their student-learning results by closely observing students as they engaged in mathematics problem solving. As a result, they took a different and more productive course of action.

Final Thoughts concludes the book by acknowledging the challenges of launching and sustaining collaborative inquiry in the face of the overwhelming and urgent demands already placed on educators. It suggests small steps that can be taken toward establishing a high-performing Using Data culture while keeping the larger goal in mind: for all of us to summon the courage and the love to search out and discover what we do not yet know about how to educate all of our children.

SUMMARY

The publication of this monograph comes at a critical juncture in education. Will the era of accountability engender greater resignation, cynicism, and failure? Or will it unleash the power of collaborative inquiry and the will to educate all children as an unstoppable force, moving us forward more quickly toward our goal of closing achievement gaps? It is our hope that you will use this monograph to inspire and inform your efforts to accomplish the latter.

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