

The *Data*  
*Coach's Guide*  
to Improving Learning  
for All Students

*Unleashing the Power  
of Collaborative Inquiry*

Nancy Love • Katherine E. Stiles  
Susan Mundry • Kathryn DiRanna

Foreword by Ruth Johnson

A JOINT PUBLICATION



**CORWIN PRESS**

A SAGE Company  
Thousand Oaks, CA 91320



TERC



RBT

WestEd 



# Contents

---

*Book*

<b>Foreword: Unleashing the Power of Collaborative Inquiry</b>	<b>xiv</b>
<i>By Ruth Johnson</i>	
<b>Acknowledgments</b>	<b>xvi</b>
<b>About the Authors</b>	<b>xix</b>
<b>Introduction</b>	<b>1</b>
Catch the Spirit of Success	1
How This Book Came About	2
Purpose of the Book	3
Audience	4
Assumptions	4
A Word About Our Language	8
How to Use This Book	9
<b>1. The Power of Collaborative Inquiry</b>	<b>13</b>
Bridging the Data Gap	16
Collaborative Inquiry Is the Bridge	18
Our Theory of Action: Building the Bridge Between Data and Results	20
The Using Data Process: A Framework for Collaborative Inquiry	20
What's Unique About the Using Data Process?	22
Student Learning Improves in Schools	
Implementing the Using Data Process	26
Schools Build High-Performing Using Data Cultures	27
<b>2. Getting Organized for Collaborative Inquiry</b>	<b>28</b>
Make Collaborative Inquiry an Integral Part of the School	
Operation and Improvement Initiatives	30
Build Stakeholder Support	31
Assess and Take Steps to Strengthen a Collaborative Culture	34
Select, Prepare, and Empower Data Coaches	35
Organize Data Teams	40
Create Time for Collaboration	42
Ensure Timely Access to Robust Data Sources:	
The Democratization of Data	43
Summary	44

<b>3. Building the Foundation</b>	<b>45</b>
Foundational Tools	48
Standard Procedures for Data Team Meetings	49
<b>Task 1: Launch the Data Team</b>	<b>52</b>
What Is Task 1?	53
Background Information for Data Coaches	53
Resources	58
Major Activities for Task 1	58
Preparing for the Task	59
Materials Preparation	59
Data Coach Notes	59
<b>Task 2: Reflect on Our School</b>	<b>67</b>
What Is Task 2?	68
Background Information for Data Coaches	69
Resources	77
Major Activities for Task 2	78
Preparing for the Task	78
Materials Preparation	78
Data Preparation	79
Data Coach Notes	81
<b>Task 3: Raise Awareness of Cultural Proficiency</b>	<b>90</b>
What Is Task 3?	91
Background Information for Data Coaches	91
Resources	99
Major Activities for Task 3	99
Preparing for the Task	100
Materials Preparation	100
Data Coach Notes	100
<b>Task 4: Commit to Shared Values, Standards, and Vision</b>	<b>104</b>
What Is Task 4?	104
Background Information for Data Coaches	106
Resources	112
Major Activities for Task 4	112
Preparing for the Task	113
Materials Preparation	113
Data Coach Notes	113
<b>4. Identifying a Student-Learning Problem</b>	<b>121</b>
Gather Data Needed for Tasks 5–12	122
<b>Task 5: Build Data Literacy</b>	<b>126</b>
What Is Task 5?	126
Background Information for Data Coaches	127
Resources	139
Major Activities for Task 5: Data Coach’s Planning Matrix	140
Preparing for the Task	141

Materials Preparation	141
Data Preparation	141
Data Coach Notes	142
<b>Task 6: Drill Down Into State CRT Data:</b>	
<b>Aggregate-Level Analysis</b>	<b>145</b>
What Is Task 6?	146
Background Information for Data Coaches	146
Resources	156
Major Activities for Task 6	156
Preparing for the Task	156
Materials Preparation	157
Data Preparation	157
Data Coach Notes	158
<b>Task 7: Drill Down Into State CRT Data:</b>	
<b>Disaggregate-Level Analysis</b>	<b>165</b>
What Is Task 7?	165
Background Information for Data Coaches	166
Resources	169
Major Activities for Task 7	170
Preparing for the Task	170
Materials Preparation	170
Data Preparation	170
Data Coach Notes	171
<b>Task 8: Drill Down Into State CRT Data: Strand-Level Analysis</b>	<b>177</b>
What Is Task 8?	177
Background Information for Data Coaches	178
Major Activities for Task 8	184
Preparing for the Task	184
Materials Preparation	184
Data Preparation	185
Data Coach Notes	186
<b>Task 9: Drill Down Into State CRT Data: Item-Level Analysis</b>	<b>191</b>
What Is Task 9?	192
Background Information for Data Coaches	194
Resources	199
Major Activities for Task 9	200
Preparing for the Task	202
Materials Preparation	202
Data Preparation	202
Data Coach Notes	203
<b>Task 10: Examine Student Work</b>	<b>213</b>
What Is Task 10?	214
Background Information for Data Coaches	214
Resources	217
Major Activities for Task 10	218

Preparing for the Task	220
Materials Preparation	220
Data Preparation	220
Data Coach Notes	223
<b>Task 11: Drill Down Into Common Assessments and Other Local</b>	
<b>Student-Learning Data Sources</b>	<b>227</b>
What Is Task 11?	228
Background Information for Data Coaches	229
Resources	234
Major Activities for Task 11	235
Preparing for the Task	236
Materials Preparation	236
Data Preparation	236
Data Coach Notes	237
<b>Task 12: Identify a Student-Learning Problem and Goal</b>	<b>241</b>
What Is Task 12?	241
Background Information for Data Coaches	242
Resources	244
Major Activities for Task 12	244
Preparing for the Task	245
Materials Preparation	245
Data Preparation	245
Data Coach Notes	245
<b>5. Verifying Causes</b>	<b>251</b>
Gather Data Needed for Task 14	252
<b>Task 13: Conduct Cause-and-Effect Analysis</b>	<b>253</b>
What Is Task 13?	255
Background Information for Data Coaches	255
Resources	260
Major Activities for Task 13	260
Preparing for the Task	261
Materials Preparation	261
Data Coach Notes	261
<b>Task 14: Verify Causes Through Research and Local Data</b>	<b>265</b>
What Is Task 14?	266
Background Information for Data Coaches	268
Resources	269
Major Activities for Task 14	269
Preparing for the Task	270
Materials Preparation	270
Data and Research Preparation	271
Data Coach Notes	271
<b>6. Generating Solutions</b>	<b>276</b>
Gather Data Needed for Tasks 15–17	277
<b>Task 15: Build Your Logic Model</b>	<b>278</b>
What Is Task 15?	278

Background Information for Data Coaches	280
Resources	285
Major Activities for Task 15	286
Preparing for the Task	287
Materials Preparation	287
Data Preparation	287
Data Coach Notes	287
<b>Task 16: Refine Outcomes and Strategies</b>	<b>292</b>
What Is Task 16?	292
Background Information for Data Coaches	294
Resources	294
Major Activities for Task 16	295
Preparing for the Task	295
Materials Preparation	295
Data Preparation	295
Data Coach Notes	295
<b>Task 17: Develop a Monitoring Plan</b>	<b>298</b>
What Is Task 17?	299
Background Information for Data Coaches	299
Resources	304
Major Activities for Task 17	304
Preparing for the Task	305
Data Preparation	305
Materials Preparation	305
Data Coach Notes	305
<b>7. Implementing, Monitoring, and Achieving Results</b>	<b>308</b>
Gather Data Needed for Tasks 18–19	309
<b>Task 18: Take Action and Monitor Results</b>	<b>311</b>
What Is Task 18?	312
Background Information for Data Coaches	314
Resources	321
Major Activities for Task 18	322
Preparing for the Task	322
Materials Preparation	322
Data Preparation	323
Data Coach Notes	323
<b>Task 19: Celebrate Success and Renew Collaborative Inquiry</b>	<b>326</b>
What Is Task 19?	326
Background Information for Data Coaches	326
Major Activities for Task 19	328
Preparing for the Task	328
Materials Preparation	328
Data Coach Notes	328
<b>8. Clark County, Nevada: Collaborative Inquiry in Action</b>	<b>333</b>
Clark County Organizes for Collaborative Inquiry	334
The Role of the Super Data Coach	335

Implementing the Using Data Process	335
Lessons Learned	336
Katz Elementary School: Problem Solving About Problem Solving	337
Appendix A: Student Work on “Addworm” Task	357
Appendix B: Teacher Observations of Student Working on “Addworm” Task	361
<b>CD-ROM Toolkit Guide</b>	<b>363</b>
<b>Sample Tool From CD-ROM Toolkit</b>	<b>366</b>
<b>References</b>	<b>369</b>
<b>Index</b>	<b>375</b>

© Hawker Brownlow Education

## OUR THEORY OF ACTION: BUILDING THE BRIDGE BETWEEN DATA AND RESULTS

Through our work as staff of the Using Data Project, the authors of this book set out to build the bridge between data and results and help to bring about the shifts in culture described earlier. The theory of action that guided us is illustrated in Figure 1.5. Our intervention, represented by the arrow pointing to the bridge, was the Using

---

*Data Coaches* are education leaders (teacher-leaders, instructional coaches, building administrators, or district staff) who guide Data Teams through the process of collaborative inquiry and influence the culture of schools to be ones in which data are used continuously, collaboratively, and effectively to improve teaching and learning. Their role is to engage others in making sense of and responding to data in ways that improve learning for all students. They facilitate the work of Data Teams, build capacity to use data well, and sustain the improvement process.

*Data Teams* in this book refers to teams of four to eight teachers, other school faculty, and, ideally, their building administrator who work together to use data and improve student learning. At an elementary school, Data Teams can be grade-level teams or representatives of different grade levels and focused on a particular content area, such as mathematics, or on school improvement in general. In a middle school or junior high and high school, Data Teams are often organized by department, content area, or common courses taught.

*Collaborative inquiry* is the process by which Data Coaches and the Data Teams use data to develop their understanding of a student-learning problem and test out solutions together through rigorous use of data and constructive dialogue.

---

Data professional development program. The program addresses the critical capacity crisis described earlier by building the knowledge and skills of Data Coaches—education leaders especially trained to guide the use of data—to lead Data Teams in collaborative inquiry (see definitions in the sidebar). Data Teams become vital and productive centers of collaboration, meeting weekly to engage in Data-Driven Dialogue, using multiple data sources, including common and formative assessments (see Task 5 for detailed information on what kind of data to use and how often). Staff collaborate in their use of data to make critical and research-based instructional improvements. These improvements are the final and necessary step to reach the shore of improved results for students. The bridge is supported by a foundation of a collaborative school culture, a commitment to equity, and a climate of trust.

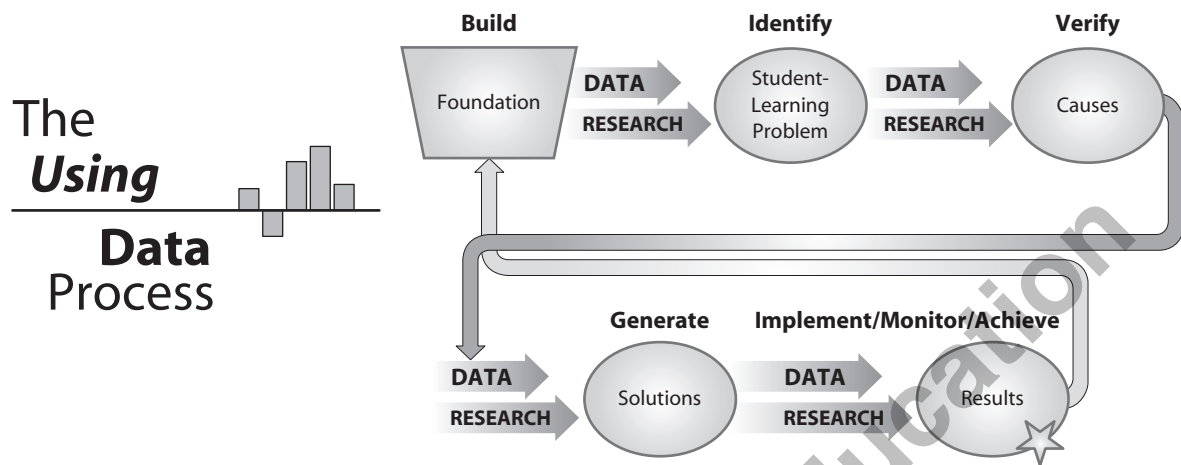
After four years of field-testing our approach in diverse schools across the country, schools putting this theory into action are building bridges between data and results: Student learning is improving; achievement gaps are narrowing; teachers are working together, making effective uses of data, and improving instruction; and their school cultures are shifting toward greater shared responsibility for all students' learning, trust, and commitment to equity (see "Student Learning Improves in Schools Implementing the Using Data Process" later in this chapter and Handout H1.3 on the CD-ROM for Task 1). The key to their success rests on their implementation of a model for collaborative inquiry we call the Using Data Process.

## THE USING DATA PROCESS: A FRAMEWORK FOR COLLABORATIVE INQUIRY

The Using Data Process of Collaborative Inquiry (Using Data Process) offers Data Coaches and Data Teams a structured process for ongoing investigation of data with the goal of improving teaching and learning. The approach incorporates multiple safeguards to prevent data disasters and keep the team focused on each step across the bridge. In this book, Data Coaches are provided with the materials and guidance to lead Data Teams through this process.



Figure 1.6 The Using Data Process components and tasks.



### BUILDING THE FOUNDATION

- Task 1:** Launch the Data Team
- Task 2:** Reflect on Our School
- Task 3:** Raise Awareness of Cultural Proficiency
- Task 4:** Commit to Shared Values, Standards, and Vision

### IDENTIFYING A STUDENT-LEARNING PROBLEM

- Task 5:** Build Data Literacy
- Task 6:** Drill Down Into State CRT Data: Aggregate-Level Analysis
- Task 7:** Drill Down Into State CRT Data: Disaggregate-Level Analysis
- Task 8:** Drill Down Into State CRT Data: Strand-Level Analysis
- Task 9:** Drill Down Into State CRT Data: Item-Level Analysis
- Task 10:** Examine Student Work
- Task 11:** Drill Down Into Common Assessments and Other Local Student-Learning Data Sources
- Task 12:** Identify a Student-Learning Problem and Goal

### VERIFYING CAUSES

- Task 13:** Conduct Cause-and-Effect Analysis
- Task 14:** Verify Causes Through Research and Local Data

### GENERATING SOLUTIONS

- Task 15:** Build Your Logic Model
- Task 16:** Refine Outcomes and Strategies
- Task 17:** Develop a Monitoring Plan

### IMPLEMENTING, MONITORING, AND ACHIEVING RESULTS

- Task 18:** Take Action and Monitor Results
- Task 19:** Celebrate Success and Renew Collaborative Inquiry

As depicted in Figure 1.6, the Using Data Process is made up of five components. Within each component is a sequence of tasks that Data Coaches carry out with Data Teams. The first component is Building the Foundation; it includes Tasks 1–4. Here, Data Coaches lay important groundwork with the Data Teams to get them off to a good start. The team focuses on establishing the culture and commitment to equity that will serve as the foundation of the bridge of collaborative inquiry. They establish their purpose as a team, learn about the Using Data Process, and make commitments to each other. They reflect on their school by examining demographic data and assessing where their school is on the road to creating a high-performing Using Data Culture. They raise their awareness of cultural proficiency and begin a process of open dialogue about issues of race/ethnicity, class, culture, gender, and diversity. Finally, they envision a desired future for their school and plan for moving toward it. The themes that are introduced in this component—norms of collaboration, Data-Driven Dialogue (Wellman & Lipton, 2004), cultural proficiency, vision, values, and high-performing culture—are recurrent throughout the Using Data Process.

The second component is Identifying a Student-Learning Problem; it includes Tasks 5–12. Guided by the Data Coach, the team members develop data literacy and examine multiple sources of student-learning data. They learn to use tools to make sense of the data and surface assumptions and frames of reference. The outcome of this component is a clearly articulated student-learning problem that can be supported with evidence from multiple data sources, including student work.

The third component, Verifying Causes, includes Tasks 13 and 14. This component is critical because it is the one often omitted in other improvement processes. Here the team members look carefully at the possible causes of their student-learning problems and examine data about their own practices as well as relevant research before drawing conclusions. The goal here is to make sure that the causes that are being acted upon are supported in research and focused on policies, practices, and beliefs that are within educators' control to act upon—not on blaming students or their circumstances.

Generating Solutions, the fourth component, includes Tasks 15–17. Here, Data Teams apply logic-model thinking to generate valid solutions to improve results. They draw on best practices in their own school and nationally as well as on research to create action plans that are clearly linked to improved student learning. They also identify the evidence that they will use to monitor implementation of new practices and measure impact on student learning.

Finally, in the fifth component, Implementing, Monitoring, and Achieving Results (Tasks 18 and 19), the Data Team implements new practices to solve the student-learning problem. The team gathers data to monitor implementation and results and identifies any mid-course corrections needed. As evidence is produced that the school is achieving or progressing toward the goal, Data Teams organize celebrations to recognize the people and practices that are making a difference for students.

## WHAT'S UNIQUE ABOUT THE USING DATA PROCESS?

The Using Data Process was designed with several unique features that are essential to its success.