The Data Wise Project

at the Harvard Graduate School of Education

supporting teams of educators in using data to improve learning and teaching

TeachingWorks

January Seminar: Using data to inform instruction

Candice Bocala

January 31, 2013

Objectives

- Provide an introduction and overview to the Data Wise Project and the Data Wise Improvement Process
- Discuss five key pedagogical strategies that we use to support others in using data to inform instruction as part of schoolwide inquiry

Introduction to The Data Wise Project

The Data Wise Project

- We began with a collaborative effort between the Boston Public Schools and the Harvard Graduate School of Education.
- We consider ourselves a “working lab” that unites university faculty, graduate students, and practitioners.

Kathryn Boudett	Elizabeth City	David Rease, Jr.	Candice Bocala	Michelle Shannon
Director of the Data Wise Project Lecturer on Education at HGSE	Exec. Director of the Doctor of Ed.Leadership Program Lecturer at HGSE	Faculty Chair of the Data Wise Project Advanced Doctoral Candidate at HGSE	Faculty Chair of the Data Wise Project Advanced Doctoral Candidate at HGSE	Faculty Chair of the Data Wise Project Advanced Doctoral Candidate at HGSE

Settings for our teaching practice

- The Data Wise Summer Institute (June)
  - For practitioner teams of teachers, administrators, district officials, coaches, etc.
- The Data Wise Impact Workshop (May)
  - For Summer Institute alumni and others working to integrate the Data Wise Improvement Process into their schools
- Data Wise courses at the Harvard Graduate School of Education (January – May)
  - For Harvard graduate students from all programs (teacher education, school leadership) and doctoral students in education leadership

Data Wise Summer Institute Program Objectives

- Understand the Data Wise Improvement Process as a way of organizing the work of improvement that participants' schools may already be doing
- Cultivate the habits of mind that can improve the effectiveness of team meetings and help foster a supportive culture of inquiry
- Experience more than 10 protocols that participants can bring home to engage faculty in the collaborative use of data
- Learn the five key elements of observing practice and appreciate the importance of examining instruction to the work of improvement
- Develop participants' ability to analyze and display data

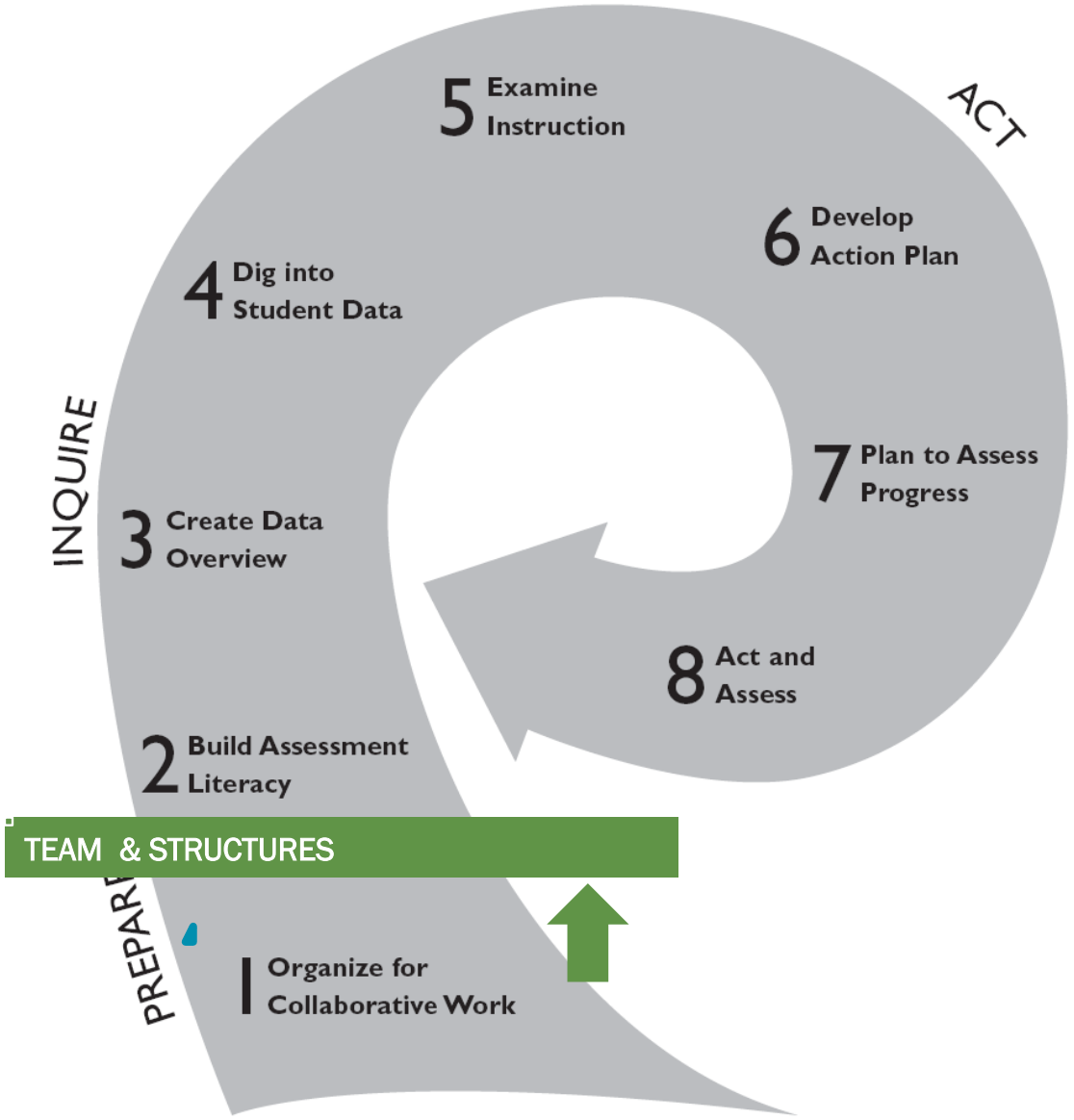
Summer Institute Schedule

Main Classroom: Gutman Conference Center

Monday, June 18 *Gutman Conference Center*	Tuesday, June 19 *Gutman Conference Center*	Wednesday, June 20 *Gutman Conference Center*	Thursday, June 21 *Gutman Conference Center*	Friday, June 22 *Gutman Conference Center*
	Morning Beverages Provided	*Morning Beverages Provided*	*Morning Beverages Provided*	*Morning Beverages Provided*
	Supporting Effective Collaboration Liz City 8:00 - 10:00 a.m.	**Big Picture** 8:00 - 8:30 a.m. **Digging into Student Data (BART)** 8:30 - 10:00 a.m.	**Big Picture** 8:00 - 8:30 a.m. **Examining Instruction** 8:30 - 10:00 a.m.	**Acting and Assessing** 8:00 - 9:15 a.m. Break, 9:15 - 9:30 a.m. **Giving and Receiving Feedback** *10 Consistent Rooms* 9:30 - 11:00 a.m. Travel Time **Looking Ahead** 11:15 - 12:00 p.m.
Registration *GCC Elevator Lobby* 9:00 - 10:00 a.m.				
Welcome Kathy Boudett and Liz City 10:00 - 10:30 a.m.	Break, 10:00 - 10:30 a.m.	Break, 10:00 - 10:30 a.m.	Break, 10:00 - 10:30 a.m.	
Framing the Context Richard Murnane 10:30 - 11:45 a.m.	**Creating a PREPARE Meeting** *10 Consistent Rooms* 10:30 - 11:45 a.m.	**Digging into Student Data (BART)** 10:30 a.m. - 12:00 p.m.	**Integrating Feedback** *10 Consistent Rooms* 10:30 a.m. - 12:00 p.m.	
Tote Lunch Optional Affinity Groups 11:45 a.m. - 1:00 p.m.	**Lunch** *On your own in Harvard Square* 11:45 a.m. - 1:15 p.m.	**Lunch** *On your own in Harvard Square* 12:00 - 1:30 p.m.	**Lunch** *On your own in Harvard Square* 12:00 - 1:30 p.m.	
Reviewing the Process / Understanding the Leadership Challenge Kathy Boudett 1:00 - 2:30 p.m.	**Building Assessment Literacy and Creating a Data Overview** 1:15 - 3:15 p.m.	**Examining Instruction** Richard Elmore 1:30 - 3:00 p.m.	**Bringing the Work Home** *Larsen 203: Evansville* *Larsen G08 or 106: Poe* 1:30 - 3:00 p.m.	
Break, 2:30 - 3:00 p.m.		Break, 3:00 - 3:30 p.m.	Break, 3:00 - 3:30 p.m.	
Organizing for Collaborative Work *10 Consistent Rooms* 3:00 - 4:30 p.m.	Break, 3:15 - 3:45 p.m.	**Creating a Data Overview Meeting** *10 Consistent Rooms* 3:30 - 5:00 p.m.	**Articulating a Theory of Action** 3:30 - 5:00 p.m.	
	Creating a Data Overview Meeting *10 Consistent Rooms* 3:45 - 4:45 p.m.			
	Building Skills Optional *Gutman 302, 303* 5:00 - 6:00 p.m.	**Building Skills** Optional *Gutman 302, 303* 5:00 - 6:00 p.m.		

The Data Wise Improvement Process

Step 1: Organize for Collaborative Work



- Adopt an improvement process
- Build a strong system of teams
- Make time for collaborative work
- Set expectations for effective meetings
- Set norms for collaborative work
- Acknowledge work style preferences
- Create a data inventory
- Create an inventory of instructional initiatives

Step 2: Build Assessment Literacy

- Review skills tested
- Study how results are reported
- Learn principles of responsible data use

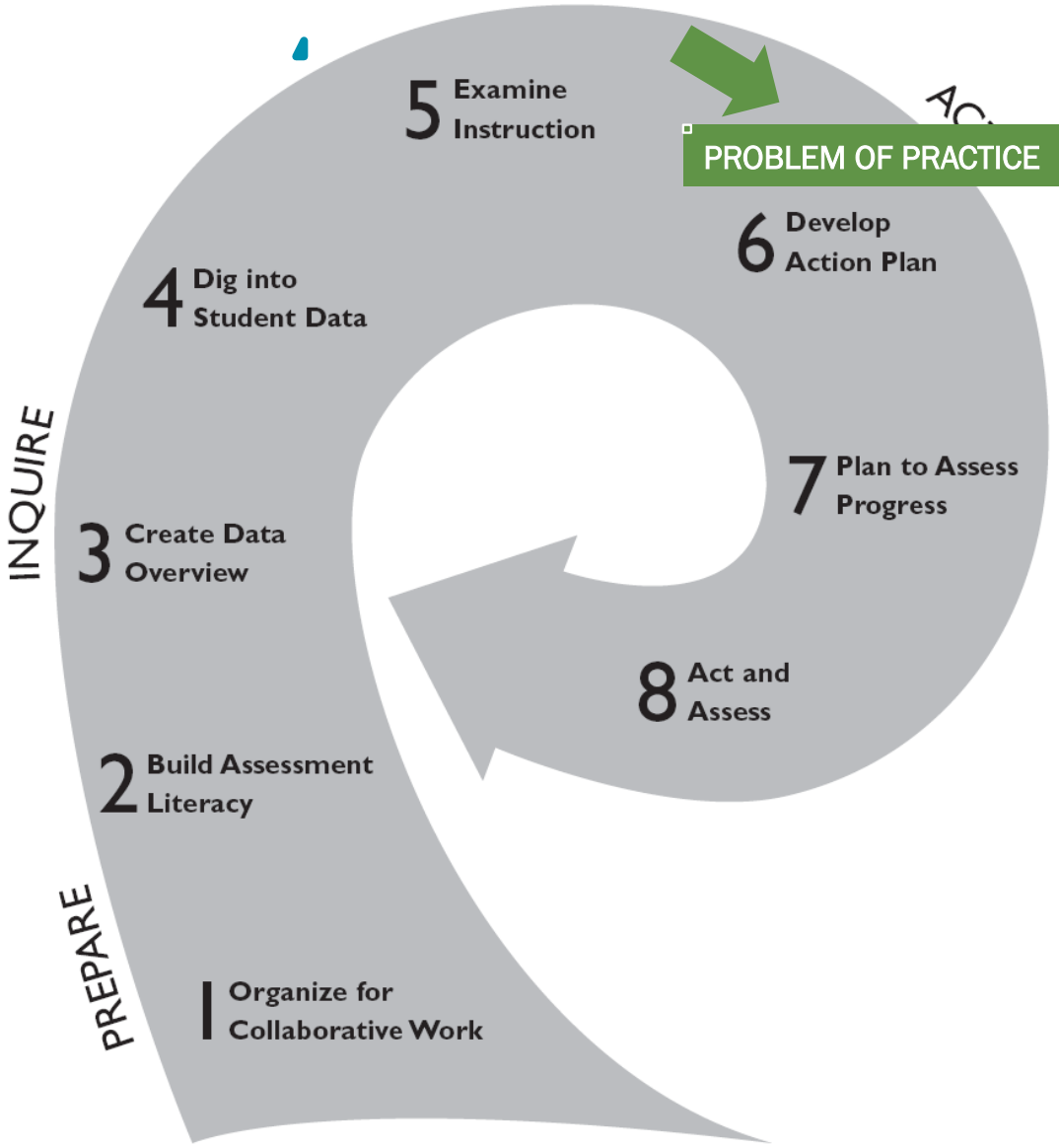
Step 3: Create Data Overview

- Choose a focus area
- Analyze data, find the story
- Display the data
- Allow staff members to make sense of the data and identify a **priority question**

Step 4: Dig into Student Data

- Examine a wide range of student data
- Come to a shared understanding of what student data show
- Identify a **learner-centered problem**

Step 5: Examine Instruction



- Examine a wide range of instructional data
- Get clear about the purpose of observation
- Come to a shared understanding of what is happening in classrooms
- Identify a problem of practice

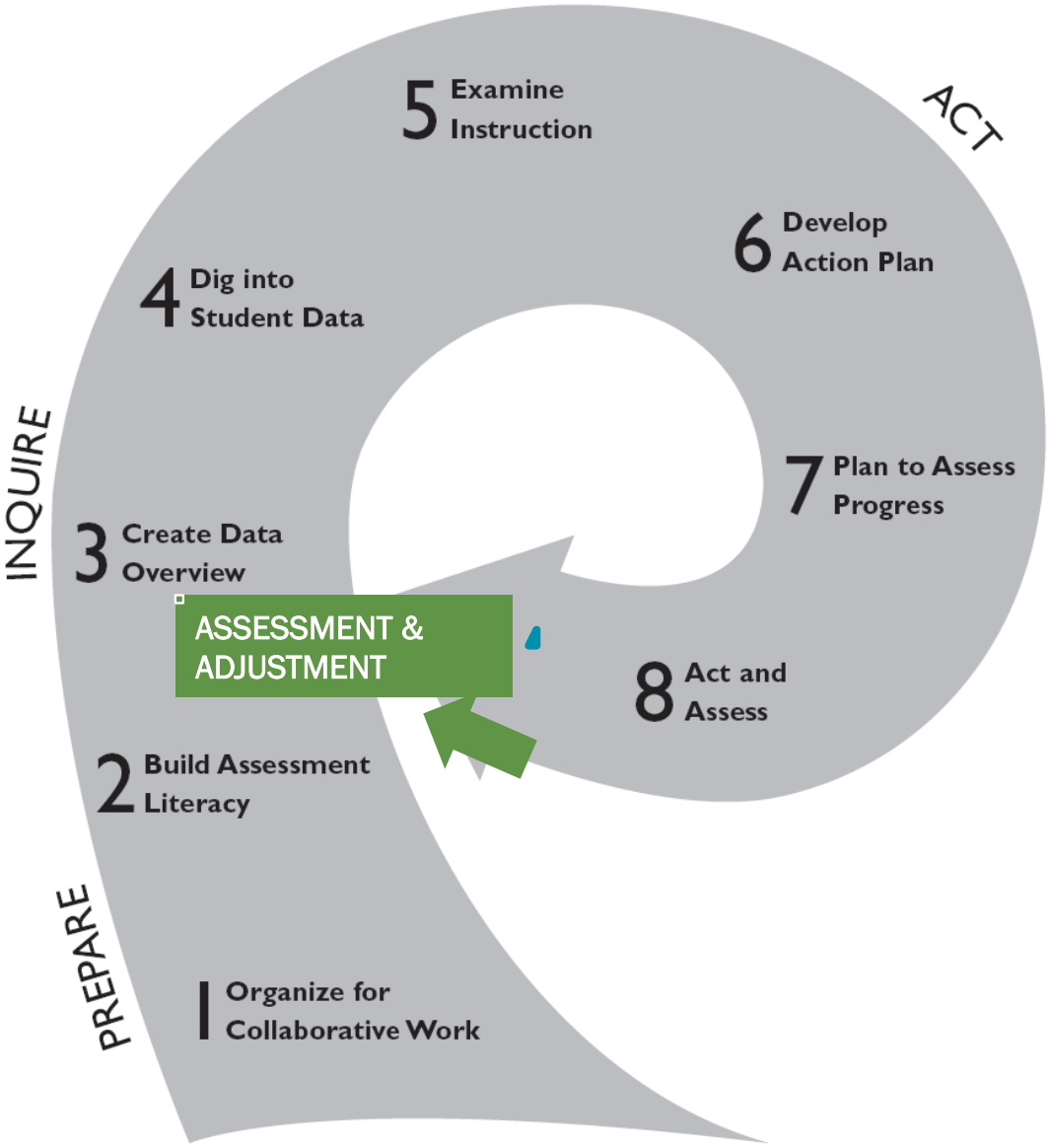
Step 6: Develop Action Plan

- Decide on instructional strategies
- Agree on what the plan will look like in classrooms
- Put the plan in writing

Step 7: Plan to Assess Progress

- Choose assessments to measure progress
- Set student learning goals

Step 8: Act and Assess



- Implement the action plan
- Assess student learning
- Adjust the action plan
- Celebrate success

Piles and Piles of data

Focus Area

Priority Question

Learner-Centered Problem

Problem of Practice

Action Plan

The ACE Habits of Mind

Shared commitment to *Action*, assessment, and adjustment

Intentional *Collaboration*

Relentless focus on *Evidence*

Key pedagogical strategies

Overview of key pedagogical strategies

- Strategy 1: Promote and model effective collaboration
- Strategy 2: Be explicit about collecting, analyzing, and displaying multiple sources of data
- Strategy 3: Allow participants to experience inquiry cycles and learn from models in practice
- Strategy 4: Provide opportunities to apply and integrate learning
- Strategy 5: Encourage reflection on action

Strategy 1: Promote and model effective collaboration

- Require participants to come in teams*
- Use checklists and templates to support the design of meeting agendas
- Model transparent meeting facilitation
- Provide frequent opportunities to experience protocols

Protocols can help with:

- Norm-setting
- Individual and group work styles
- Collaborative examination of data displays
- Looking at student work
- Classroom observation
- Gathering feedback

Meeting Wise Checklist

	Reflective Question	Yes	No	N/A
Preparation	A. Do we assign clear roles for the meeting, such as facilitator and recorder?			
	B. Have we identified clear, reasonable, and important meeting objectives that contribute to the goal of improving learning and teaching?			
	C. Do participants know, with sufficient notice, what they need to do to prepare for this meeting?			
	D. Have we prepared for this meeting by developing charts, drafts or other materials that will support the conversation?			
Schedule	E. Does this meeting account for participant feedback from previous meetings?			
	F. Have we chosen rigorous, challenging activities that support our meeting objectives?			
	G. Do we have strategies for engaging all participants in the work of the meeting?			
	H. Is it realistic that we could get through our agenda in the time allocated (and are we addressing are most important objectives early in the meeting)?			
	I. Will each participant leave this meeting with an understanding of his/her next steps?			
	J. Do we have a strategy for assessing what worked and what didn't in this meeting?			

Strategy 2: Be explicit about collecting, analyzing, and displaying multiple sources of data

- Provide explicit instruction of core assessment literacy concepts:
  - Reliability
  - Validity
  - Sampling principle
  - Comparisons over time
  - Triangulation
- Create a series of self-paced online tutorials for learning how to display data using Excel and PowerPoint
- Use checklists and templates for displaying data
- Engage participants in collaborative analysis of data using Argyris's concept of the *ladder of inference*

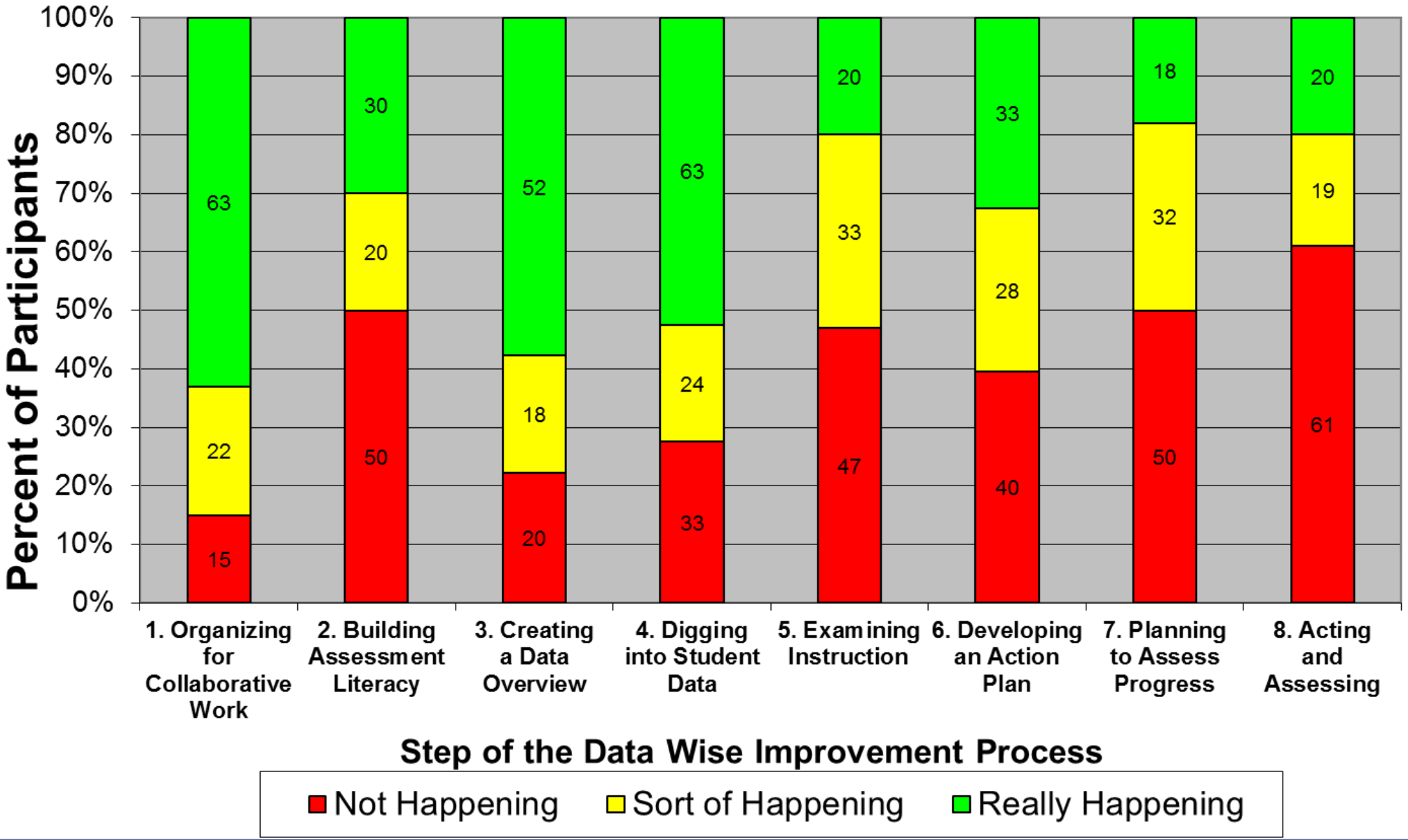
Data Display Checklist

Each display provides a complete title, including:	Yes	No	Comments
1. Assessment name and content area			
2. Group(s) Assessed			
3. Date(s) of assessment			
4. Number of students tested (n=___)			
5. Any other important information needed for readers to interpret the graph (e.g., groups compared)			
Each display is simple and easy to read:	**Yes**	**No**	**Comments**
1. Choice of chart style is appropriate.			
2. Space and color are used effectively.			
3. Fonts are large enough that the audience can read them.			
4. X- and Y-axes are clearly labeled			
5. Y-axis has an appropriate scale			
6. Legend is included (if needed)			

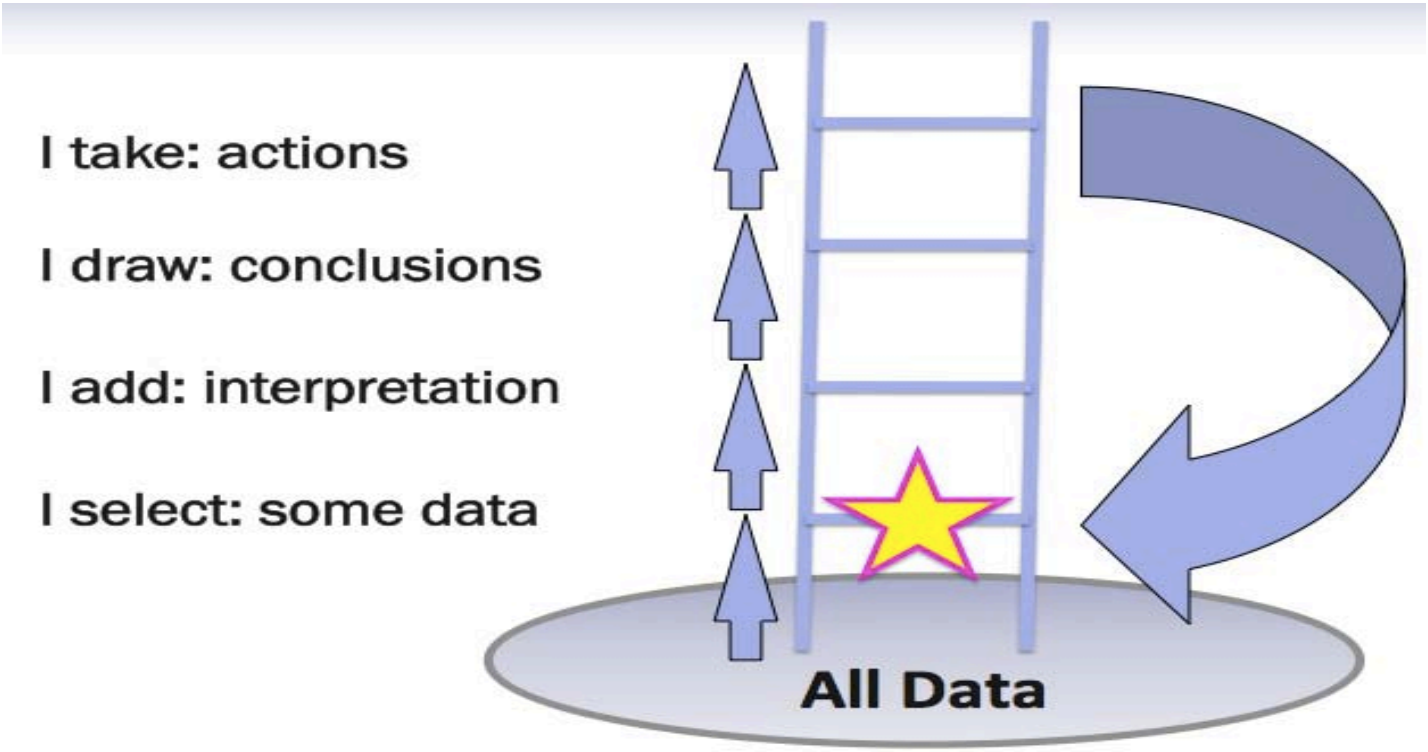
Perceptions of Data Practices

Data Wise Summer Institute

June, 2012 (n= 108)



The Ladder of Inference



- A mental model first developed by organizational theorist Chris Argyris
- Excellent description in: Senge, P., Cambron-McCabe, N., Lucas, T. Smith, B. Dutton, J., & Kleiner, A. (2000). *Schools that Learn: A Fifth Discipline Handbook for Educators, parents, and Everyone Who Cares About Education.* Doubleday/Currency.

Critical Reading: Question 11
Difficulty Level: HARD (7 on a scale of 1-9)

Skill Category: Reasoning and Inferencing
Understand assumptions, suggestions and implications in reading pa

Passage 1

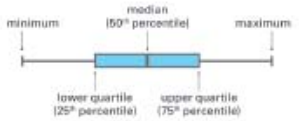
When we scan the settlements of the Southwest that have evolved since the late 1930s, we see that the desert has now vanished except as a pejorative—the asphalt desert, barren and lifeless. Every place is now just one more sprawl city. We pass cookie-cutter clutter—fake ranches, pseudo-adobe walls, scattered shopping strips, and malls. The road is congested, the buildings to either side helter-skelter and charmless. A one-story antique mall sits across the road from a child care stop, next to a wallpaper store, diagonal from a storefront chiropractor. All are disconnected and unreachable on foot. Behind them the endless subdivisions and copycat houses proliferate, oblivious to any real sense of place.

Line 5

Line 10

Score Distribution

The "boxplots" to the right show the distribution of test scores for your students, as well as for the state and nation. When interpreting these results, focus on typical scores (means and medians), variability in scores (standard deviations and lengths of boxes), and shapes of distributions (position of boxes relative to the median). Plots that have boxes that are off-center reveal that a greater proportion of students are high-scoring (the box to the right) or low-scoring (box appears to the left).



Note: The minimum and maximum exclude outliers.

Test Section	Group	Mean Score	Standard Deviation
Critical Reading	**School**	**44.7**	**9.7**
	State	42.9	10.7
	Nation	42.3	10.7
Mathematics	**School**	**42.4**	**9.3**
	State	43.3	10.9
	Nation	42.3	11.0
Writing Skills	**School**	**43.3**	**10.1**
	State	40.3	10.0
	Nation	40.3	9.9

Score Distribution

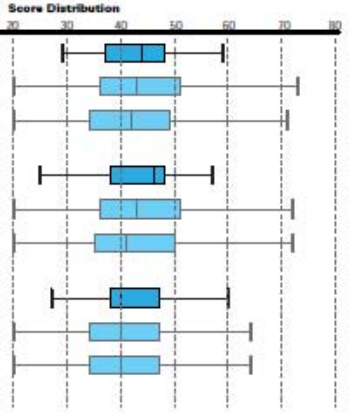
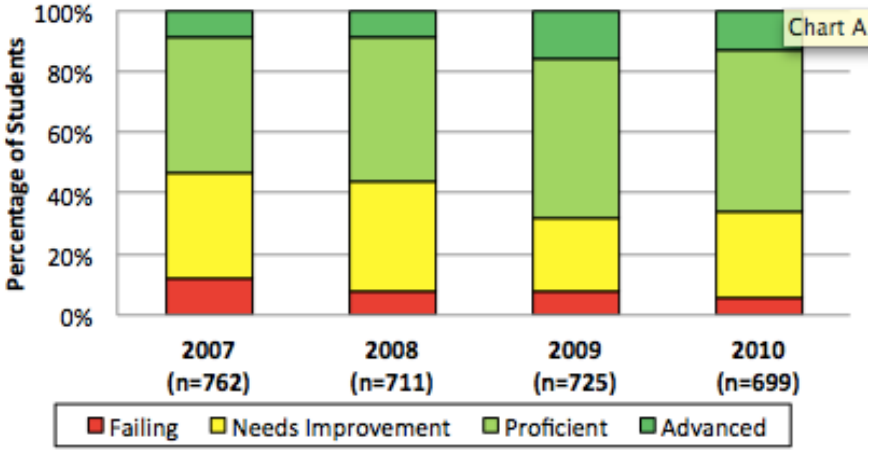


Chart 1: Performance Levels Over Time

Grade 10 State Comprehensive Assessment: ELA
Franklin High School, 2007-2010



You have a total of four pages on which to write your final composition. Please begin here.

In a story it can be the villain that has the greatest impact instead of the hero or the damsel in distress. The villain is the character that is behind the evil and destruction, and when damage is done all the other characters are effected as well as the hero. The villain is also portrayed through what the main character(s) do and the novel Harry Potter and the Deathly Hallows by J. K. Rowling is no exception. In this novel Voldemort is the villain who is trying to kill Harry, but Harry and his friends have been on the run which makes Voldemorts job difficult. He

Using a protocol to examine data from videos of classroom instruction

Strategy 3: Allow participants to experience inquiry cycles and learn from models in practice

- Engage participants in a **multimedia** case based on a real school undergoing a complete inquiry cycle
  - The Berkshire Arts & Technology Public Charter School (BART) case
- Discuss case studies of real schools using data for school improvement
  - Book: *Data Wise In Action*
  - Teaching cases: "Data Wise at Poe Middle School in San Antonio, Texas" and "Data Wise District-Wide in Evansville, Indiana"

Summer Institute Participants engaging in the multimedia case and making decisions as if they were the school team.

Strategy 4: Provide opportunities to apply and integrate learning

- Have schools fill out out a “data inventory” of possible data sources at their disposal and have them work with that inventory and data at the Summer Institute
- Give assignments that focus on integrating the Data Wise Improvement Process into the existing work of schools & districts

Assignment examples:

- Plan a series of meetings
- Create a data overview presentation
- Write a theory of action for how your school uses data to inform teaching and learning

Participants analyze what their schools are already doing related to using data and inquiry.

Strategy 5: Encourage reflection on action

- Collect and use feedback daily to improve instruction
  - Plus / Delta protocol
  - Protocol debriefs
- Provide participants with opportunities and scaffolds to document and share their own learning
  - Frequent public presentations
  - “Journey Presentation” Template
- Reflect on growth and development over time
  - The Data Wise Rubric

Protocol: Plus/Delta

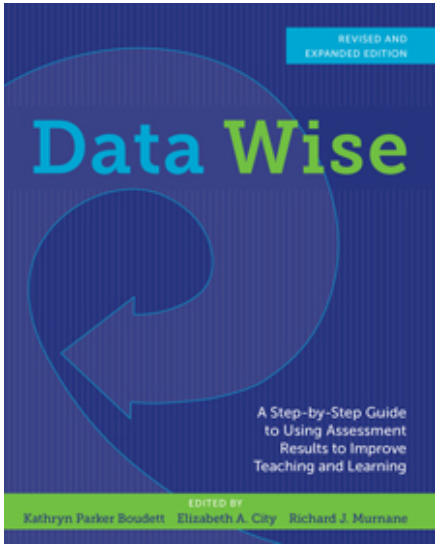
+	Δ
What worked well	What to change next time

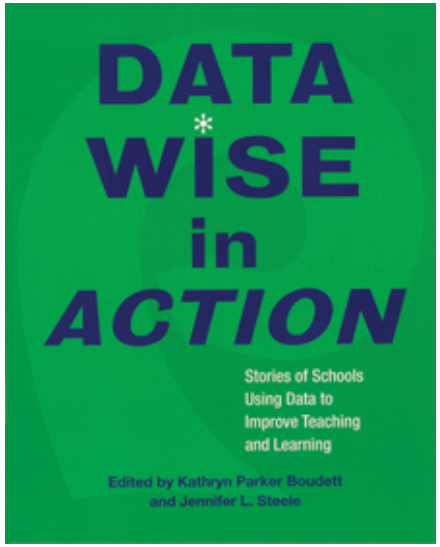
Reflections from our students

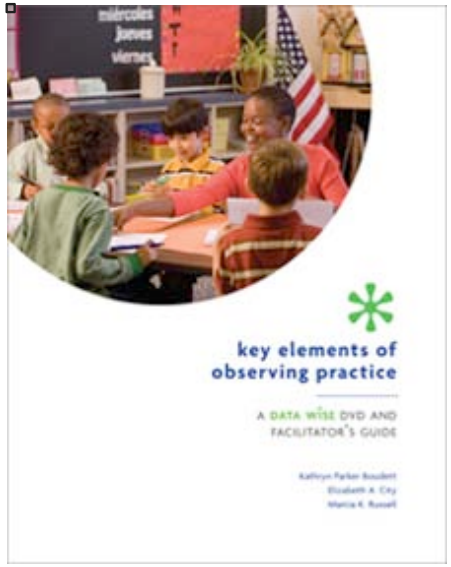
- I used to think [data] was just numbers… that you had to be an expert to make meaningful use of the data.
  - And now I think especially when working collaboratively, anyone can make sense of data and use it carefully to make plans for improvement… [It] is any information we collect that helps us to answer a question.
- I used to think that it was all about the data: its accuracy, validity, the amount we have.
  - And now I think that to achieve success in using data to affect change, the attitudes and skills of the people implementing the change is more important, and related to that, the skill of leadership to manage adaptive challenges.

A metaphor from nature: the New Zealand Koru (silver fern)

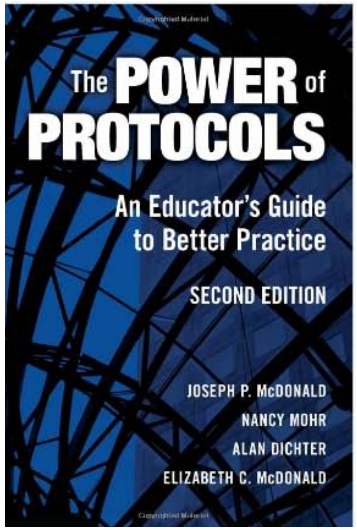
Publications from the Data Wise Project:

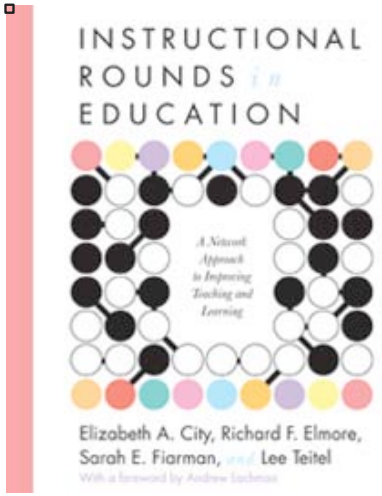






Other resources we have found useful:





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- Kaufman, T. E., Grimm, E. D., Miller, A. E. (2012). *Collaborative school improvement.* Cambridge, MA: Harvard Education Press.
- McDonald, J. P., Mohr, N., Dichter, A., McDonald, E. C. (2007). *The power of protocols, 2nd edition.* New York: Teachers College Press.

Thank you TeachingWorks, University of Michigan, & seminar participants!

Please feel free to contact me with questions:

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