

*With increased accountability, American schools and those who work in them are being asked to do something new—to engage in systematic, continuous improvement in the quality of the educational experience of students and to subject themselves to the discipline of measuring their success by the metric of students’ academic performance. Most people who currently work in public schools weren’t hired to do this work, nor have they been adequately prepared to do it*

*either by their professional education or by their prior experience in schools* (ELMORE, 2002, P. 5).

*Schools are gathering more and more data, but having data available does not mean that data are used to guide instructional improvement. Many schools lack the process to connect the data that they have with the results they must produce* (LOVE, 2004, P. 28).

## The Need

To meet the challenges of accountability, there is a critical and immediate need for schools to use the increasing quantity of data now available to them to improve student performance. The problem is no longer the lack of access to data. Schools are drowning in data. The problem is, as Elmore and Love observe, schools do not know what to do with the data. Without a systematic process for using data effectively for continuous improvement, many schools, particularly those serving high-poverty students, will languish in chronic low performance in mathematics, science, and other content areas, even with the consistent pressures of accountability. Achievement gaps will persist. Or, even worse, the abuses of data—drilling students on test items, narrowing the curriculum, tutoring “bubble” students while failing to improve instruction, reacting to disaggregated data by instituting practices such as tracking—will leave underserved students even worse off (Abrams & Madaus, 2003; Confrey & Makar, 2003; Love, 2003). As Richard Elmore says, “when we bear down on testing without the reciprocal supply of capacity, . . . we exacerbate the problem we are trying to fix” (2003, p. 7).

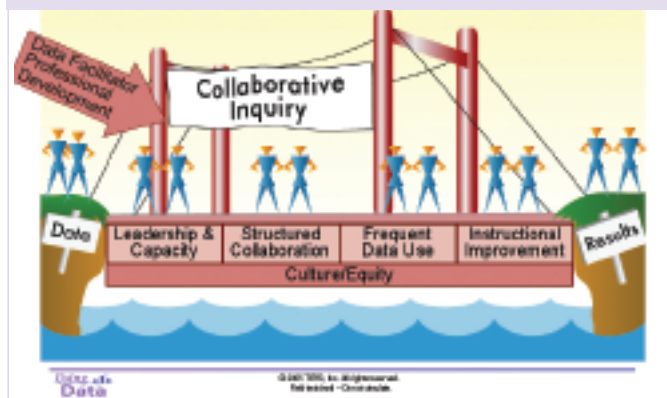
## The Using Data Project Beliefs and Theory of Action

Developed through funding from the National Science Foundation and based on the publication *Using Data/Getting Results: A Practical Guide for School Improvement in Mathematics and Science*, the Using Data Project (UDP) is helping schools across the country build the bridge between data and results. Almost three years into the project, data are now becoming available that demonstrate that UDP is solving the very problem virtually every low-performing school is now facing—how to engage in systematic and continuous improvement—and it is doing so in diverse, high-poverty, K-12 schools, including large urban districts such as Las Vegas, Nevada, mid-size cities; Canton, Ohio, and Colorado Springs, Colorado; and rural schools in the mountains of Tennessee and the Indian reservations of Arizona.

*The work of UDP is grounded in two fundamental assumptions:*

- 1) Significant progress in closing achievement gaps is a moral responsibility and a possibility in a relatively short amount of time—two to five years.
- 2) Collaborative inquiry—a process where educators take collective responsibility for student learning, construct their understanding of student learning problems, and embrace and test out solutions together through rigorous

## Building the Bridge Between Data and Results



use of data and reflective dialogue—unleashes the creativity and resourcefulness of educators to solve the biggest problems schools face. As illustrated above, collaborative inquiry is the process that enables schools to connect the data that they have to the results that they want.

Guided by these beliefs, UDP’s purpose is to build the capacity of school and district-based teacher leaders and administrators to lead a process of collaborative inquiry to influence the culture of schools so that data are used continuously, collaboratively, and effectively to improve teaching and learning. To achieve this purpose, the project provides comprehensive professional development and support materials to prepare leaders to play the role of data facilitator, leading grade-level, subject-area data teams through a structured improvement process. Specifically, data facilitators learn to apply core competencies that the project has found to be associated with high-capacity data use, linking data to instructional improvement and achievement gains:

- **Collaborative inquiry and data literacy skills** to accurately interpret multiple data sources—including summative and formative assessments; interview, survey, and observation data; and research to identify student learning problems—verify causes, generate solutions, test hypotheses, and improve results.

- **Content and pedagogical content knowledge** to generate high-capacity uses and responses to data that result in effective interventions and improved teaching and learning.
- **Cultural responsiveness** to view achievement gaps as solvable problems, not inevitable consequences of students’ backgrounds, generate solutions that reflect an understanding of diverse students’ strengths, values, and perspectives, and handle cultural conflict effectively.
- **Leadership and facilitation skills** to lead data teams through a structured process of collaborative inquiry, engage in data-driven dialogue, and effectively manage difficult conversations.

The project’s theory of action or logic model (see graphic) is that building **leadership and capacity** of skilled data facilitators is the first step across the bridge to results. Data facilitators, in turn, build the leadership and capacity of teachers in grade-level or subject-area teams to engage in data-driven dialogue, using highly engaging tools such as data walls, three-phase dialogue, stoplight highlighting, and diagnostic tree. Through **structured collaboration** with a clear focus, process, and goals and **frequent and in depth uses of data and research**, teachers generate and implement **instructional improvement** and monitor the impact on student learning. These fundamental shifts in practice are the path across the bridge, leading to **student learning gains**. Together these changes build a collaborative **culture**, empower teachers, and strengthen the collective will and responsibility to serve all children.

## Results

According to UDP’s external evaluator, Intercultural Research in Education (INCRE), “there is extensive evidence to document greater engagement in data-driven decision-making among UDP participants, greater and more meaningful use of data, and increased collaborative inquiry in participating schools” (Zuman, unpublished

report, 2005). INCRE's report also points to preliminary evidence linking changes in instruction based on data-driven decision-making to measurable improvements in student outcomes. It also clearly identifies the role of the data facilitator as key in helping to bring about these positive outcomes. The results, in fact, have been so impressive, that the National Science Foundation recently funded TERC to write a monograph sharing the Using Data success story with school districts across the country through NSF's Foundations Series. Here are some highlights from interviews and achievement data that have been collected to date at Using Data sites. A full evaluation report will be available in 2006.

### **Leadership and Capacity: A Community of Leaders**

"When people here say 'data,' they usually think of that stuff they take care of in the office. Through the UDP, we learn that we work together to analyze the data and that there are direct implications for classroom instruction. There is something that everyone can do to have all of our students be the best they can be," —Karen Croteau, Data Facilitator and Teacher, Las Vegas, Nevada (Personal Communication, 2004).

"Using data used to mean rubbing teachers' noses in poor performance. But that didn't get us anywhere. Now we have a process that gives teachers a voice and a lens for looking at data. With teachers as the change agents, we are starting to see real movement," Richard Dinko, Former Co-Principal Investigator, Stark County County Mathematics and Science Partnership, Canton, Ohio (Personal Communication, 2004).

### **Structured Collaboration**

"The biggest change is that our school went from a group of individual teachers to a community." —Aileen Dickey, Principal and Data Facilitator, Wildflower Elementary School, Colorado Springs, Colorado (Personal Communication, 2005).

"We had professional learning communities. But until UDP, we didn't really know how to make the best use of our time," —Deb Poland, Teacher Coach and Data Facilitator, Perry Local School District, Perry, Ohio (Personal Communication, 2005)

### **Frequent and In Depth Data Use**

"Data used to be a secret. Now everyone uses data," Teresa Cunningham, Principal, Laurel Elementary School, Johnson County, Tennessee (Personal Communication, 2005)

"Teachers didn't know how to talk data. It was at the surface level. It wasn't going down deep. Now we go into great detail," Keith Greer, Principal, Casa Grande High School, Casa Grande, Arizona (Personal Communication, 2005)

### **Instructional Improvement**

"The data are causing us to do things differently. We set a goal for improvement. Now we teach to achieve that goal." Mia Merrick, Data Facilitator and Mathematics Teacher, Salt River High School, Mesa, Arizona (Personal communication, 2004)

"We learned that we needed to look at what as a staff would make the most impact on students - instructional practice." Eileen Armelin, Data Facilitator and Teacher, San Carlos Junior High School, San Carlos, Arizona (Personal Communication, 2005)

### **Culture Change**

"I don't think we can ever go back. Using Data has become a part of our culture," Mary Ann Wood, Data Facilitator, Salt River Elementary School, Mesa, Arizona (Personal Communication, 2005)

## Student Learning Results<sup>1</sup>

**Canton City, Ohio:** Three middle schools serving 66-82% economically disadvantaged students virtually doubled the percentage of students passing the state assessment in mathematics in 2003-2004 after implementing the Using Data Process and common grade-level quarterly assessments. In 2005, three of four schools maintained or exceeded achievement gains made in 2004 (Ohio Department of Education, 2005).

**Johnson County, Tennessee:** All seven schools in Johnson County, Tennessee, including one high school, one middle school, and five elementary schools, improved the performance of students with disabilities in mathematics, science, and language arts from 2004-2005. For example, in mathematics, the percentage of students in Grades 3, 5, and 8 earning proficient and above went from 36% to 73%; grades 9-12 the percentage of students earning proficient and above went from 30% to 58% after a concerted improvement effort based on the Using Data Project (Tennessee Department of Education, 2005).

**Rural Schools serving Native American children in collaboration with the Arizona Rural Systemic Initiative, Mesa, Arizona:** Three participating schools made significant gains in student achievement on the Arizona State Assessment: San Carlos Junior High School, San Carlos Intermediate School, and Salt River Elementary School. For example, San Carlos Junior High School, San Carlos, Arizona, cut the percentage of students in the "Falls Far Below" category from 95% in 2001 to 45% in 2005 in eighth grade mathematics and met Adequate Yearly Progress in mathematics in 2005.

**Colorado Springs, Colorado:** Wildflower Elementary School increased performance on Colorado State Assessment in fifth grade Mathematics from 29% in 2002 to 59% on 2005 after the principal turned the entire faculty into a data team and implemented the Using Data Project (Colorado Department of Education, 2005).

<sup>1</sup> Gains correlate with implementation of Using Data Project. No controlled or double blind research studies have been conducted.

## Challenges

Through word of mouth, the Using Data Project has received multiple requests from school districts across the country to implement its program. To respond to this demand and bring UDP success to more schools, the project faces the challenge of building its own capacity to grow by developing a national cadre of trainers and materials to support them and developing the business potential of this proven program.

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