

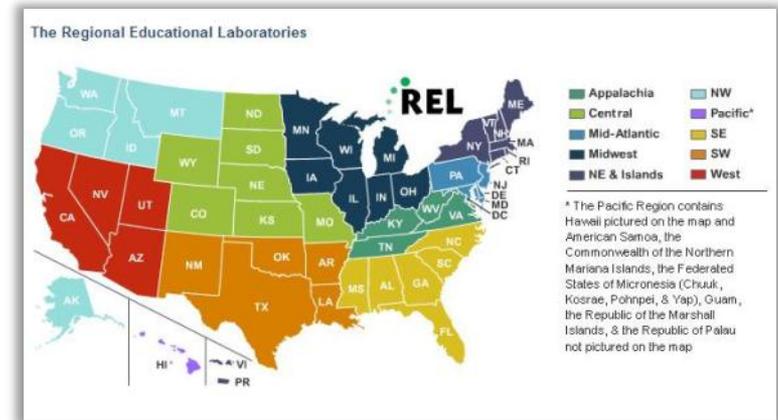
Practitioner Data Use Workshop

Date
Location
Presenters



What is a Regional Educational Laboratory?

- Network of 10 RELs across the country
- Help states and districts use research and data to inform policy and practice with the goal of improving student outcomes
- Funded by USED Institute of Education Sciences



ies.ed.gov/ncee/edlabs/

Goals for Today

During the workshop, participants will:

- Become familiar with an **inquiry framework** for interpreting data.
- Be introduced to common first steps in data use, such as determining the **questions to be answered with data** and building **data literacy**.
- Engage in a **protocol to analyze data** and identify a student learning challenge.
- Generate **possible root causes** that contribute to a student learning challenge and possible related teacher actions.
- Draft **student learning goals and action plans**.
- Review how to **monitor results**.



Agenda - morning

10 minutes	Welcome and REL-NEI (Regional Education Laboratory - Northeast and Islands) overview
10 minutes	Workshop overview and learning goals
15 minutes	Knowledge, skills, and abilities of data-driven action
10 minutes	Research on collaborative data inquiry
15 minutes	The inquiry cycle
15 minutes	BREAK
20 minutes	Step 1: Seek information
20 minutes	Step 2: Access and gather data
60 minutes	Step 3: Analyze and interpret data
45 minutes	LUNCH



Agenda - afternoon

20 minutes	Step 4: Act—student learning goals
30 minutes	Step 4: Act—root causes
10 minutes	BREAK
20 minutes	Step 4: Act—generating solutions
20 minutes	Step 5: Evaluate
20 minutes	Taking next steps
10 minutes	Questions, closing



Knowledge, skills, and abilities for data-driven action

- What data do you encounter in your job?
- In what format do the data appear?
- How do you use the data?



Knowledge, skills, and abilities for data-driven action

Educators use data to:

Make instructional decisions

- Identify where classes or students are succeeding or struggling
- Modify, adjust, or differentiate instruction

Set goals

- Classroom or student goals
- Professional practice or teacher goals

Engage in collaborative decisionmaking

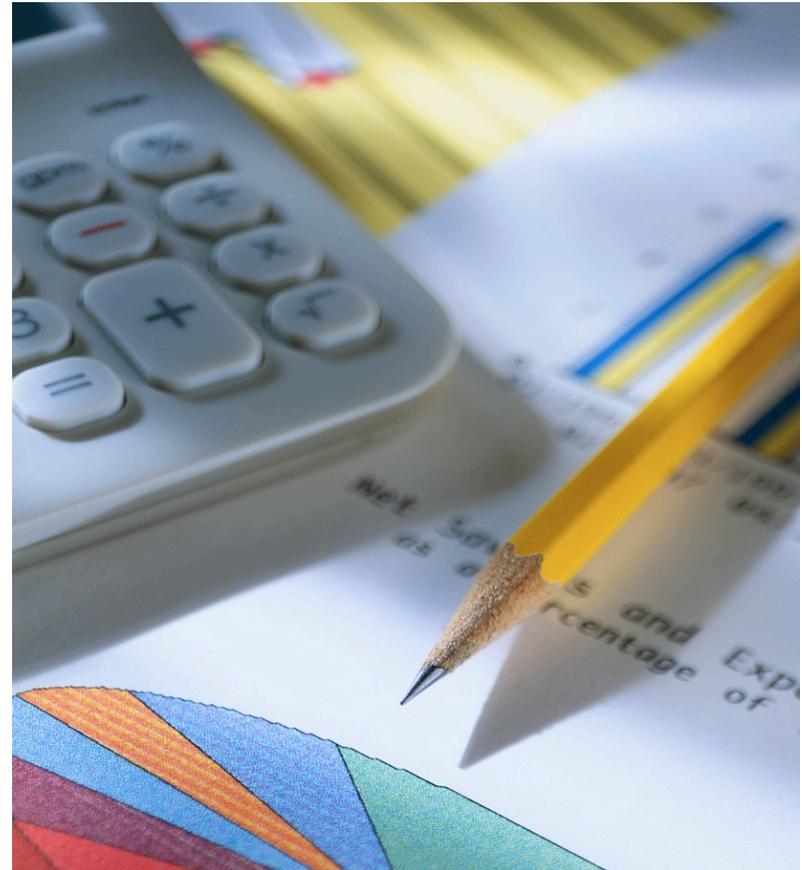
- Design extra supports and services for students
- Learn from other teachers' successful practices



Handout 3: Knowledge, skills, and abilities for data-driven action

Compare your lists of data use with the skills and abilities listed in the handout.

- Which of these do you participate in regularly at your school?
- Which skill do you feel most comfortable with?
- Which skill do you feel least comfortable with?



What has research found?

Using a **clearly articulated and structured inquiry process** was key in building new capacities for school improvement (Copland, 2003).

Schools that used **an inquiry-focused protocol** to guide their grade-level investigations:

- Substantially increased student achievement.
- Shifted attributions of improved student learning from external sources to their own instruction (Gallimore, Ermeling, Saunders, & Goldenberg, 2009).

Why a structured inquiry process?

- 1) Sustains team focus on an instructional issue long enough to develop and test solutions in the classroom, observe and discuss causal connections, and question current practices.
- 2) Frames repeated cycles of action and reflection to explore underlying assumptions and beliefs and revise conceptions of effective teaching and learning.

(Achinstein, 2002; Edmondson, 2002; Stokes, 2001; Timperley, 2008)

Different group stances toward data

- The set of beliefs that shape our dispositions toward, approaches to, and actions with student learning data

Proving

Using data to show **specific gains or losses in student learning**

Numeric scores or rankings

More concerned with proving effectiveness of practice

Improving

Using data to **better understand student ideas & thinking**

Student work, observations

More concerned with improving and rethinking practice, generating new questions

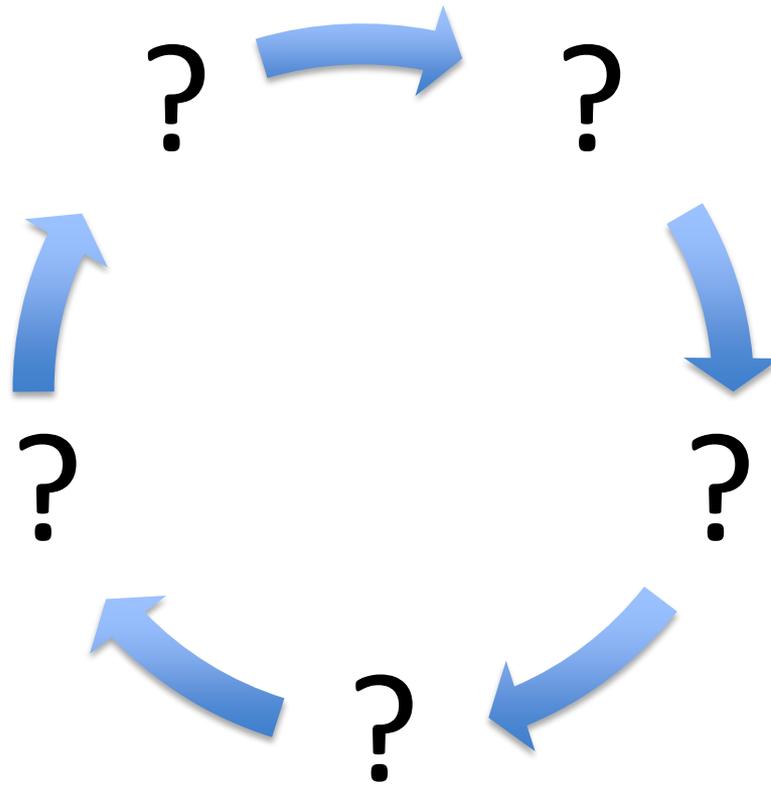
(Charalambous & Silver, 2008; McLaughlin & Zarrow, 2001; Nelson, Slavit, & Deuel, 2012)

Reactions to the research

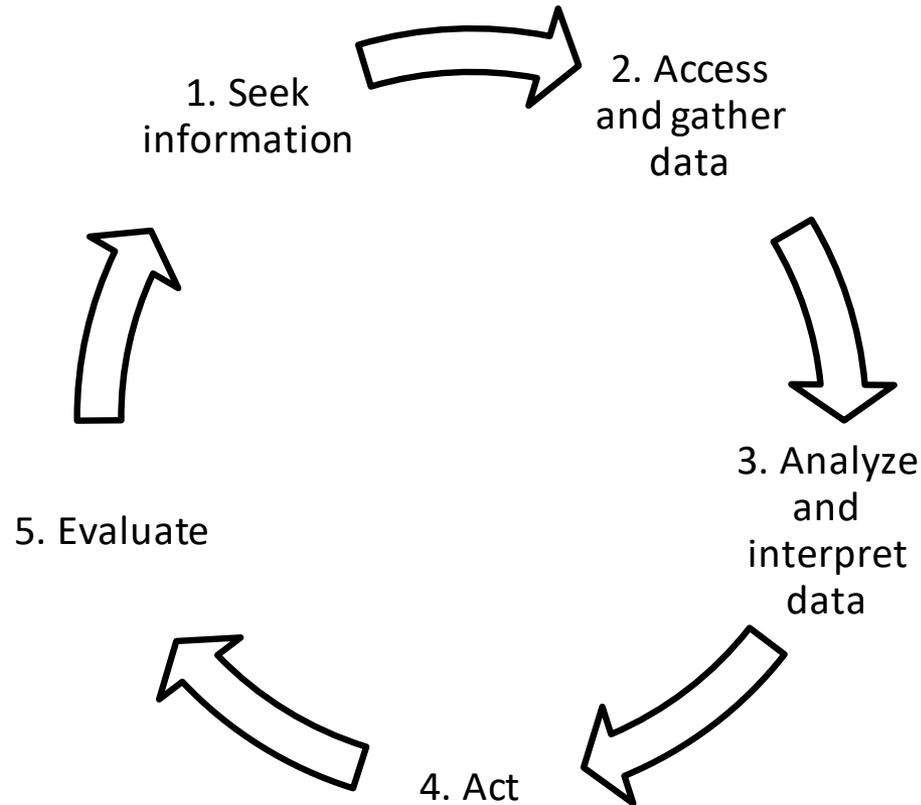
- What is your reaction to the research on collaborative inquiry and data use?
- What sounds familiar? Surprising?
- Why do you think there is more focus on collaborative, data-based inquiry in schools today?



Conceptualizing a data inquiry cycle



The inquiry cycle

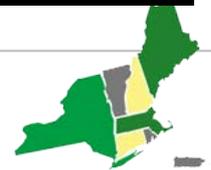


National Forum on Education Statistics. (2012). *Forum Guide to Taking Action with Education Data*. (NFES 2013-801). U.S. Department of Education. Washington, DC: National Center for Education Statistics.

Handout 6: Personal data plan template

Personal data plan template

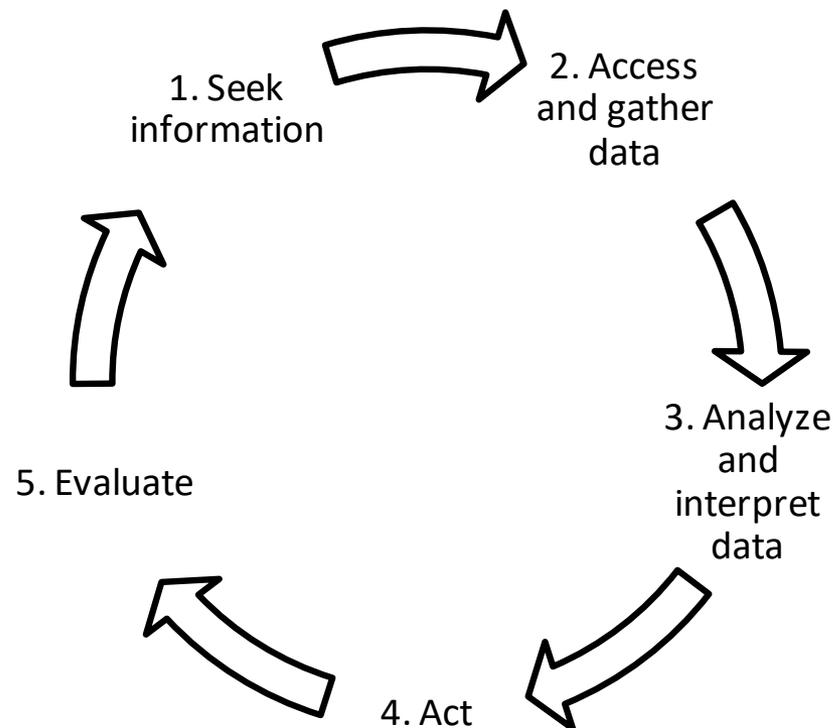
Data use cycle	Question	Application
Step 1: Seek information	Which standards or content areas do we want to focus on?	
	Why are these standards or content areas important to focus on?	
	Related to these standards or content areas, what questions about student learning can be answered by looking at data?	





Step 1: Guiding questions

- *What is our focus area?*
- *What questions can we ask about student learning that can be answered by looking at data related to this focus area?*





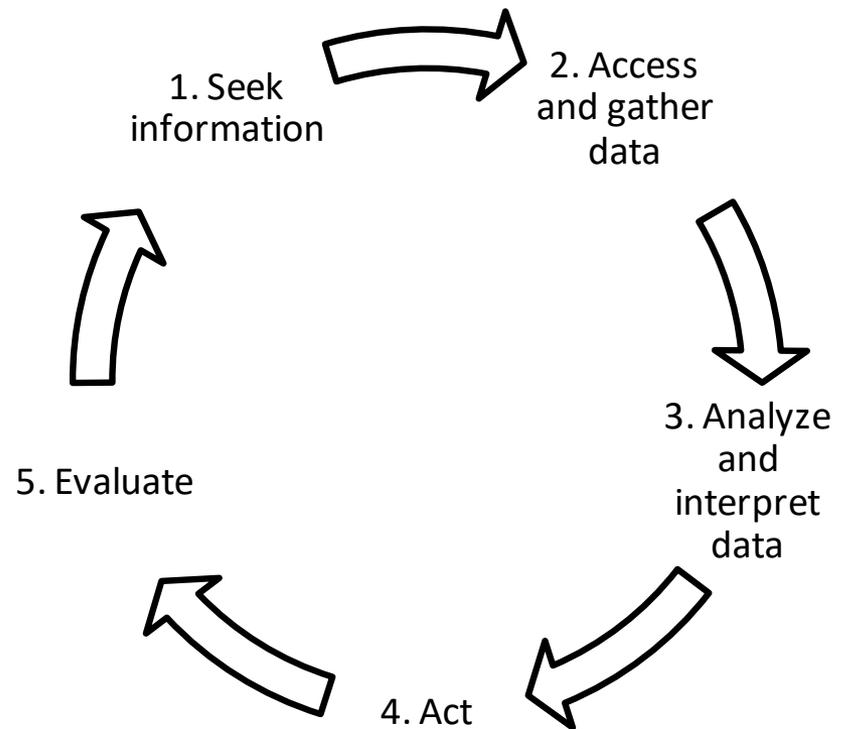
Finding a focus question

- What are your high-priority standards or content?
- What do you want to know about students' learning of that content?

- How are our students performing on early literacy assessments?
- How well do our students understand algebraic concepts and procedures?
- How well do our students write analytically?



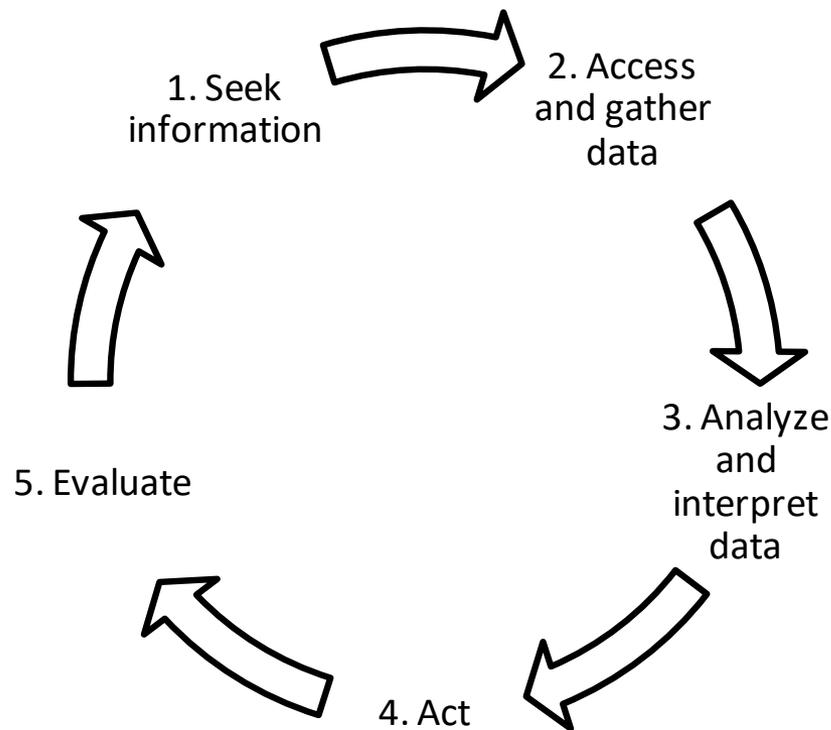
Discuss your instructional focus and fill out Step 1: Seek Information on your personal data plan template.





Step 2: Guiding questions

- *What data do we have and what data can we get?*
- *What data are available at different levels (classroom, school, district, and state)?*
- *What do our data sources show, and what are their limitations?*





Drilling down

Aggregated data:
Student learning data results compiled at the largest level

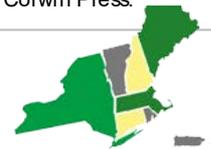
Disaggregated data:
Separated into groups by race/ethnicity, language, economic level, and/or education status

Strand data: Separated into groups of data sets by content areas

Item-level data: Reported by student performance on individual test items

Student work: Artifacts that show evidence of student thinking

Source: Love, Stiles, Mundry, & DiRanna. (2008). *A Data Coach's Guide to Improving Learning for All Students*. Corwin Press.





Handout 8: Review the data’s focus and limitations

Data source
(What this data source describes)

Example:

This data source shows the proficiency levels that the School’s grade 6 students achieved on the state’s annual reading test in comparison with grade 6 students across the state for the past three years (spring of 2011, 2012, and 2013).

Types of data included
(What this data source conveys)

Example:

Shows four proficiency levels.
Shows the total number of grade 6 students who took the test in 2011, 2012, and 2013.
Notes revisions in the reading test between the 2010 and 2011 administrations.
Shows scores aggregated for all reading topics and for all grade 6 students in the school.

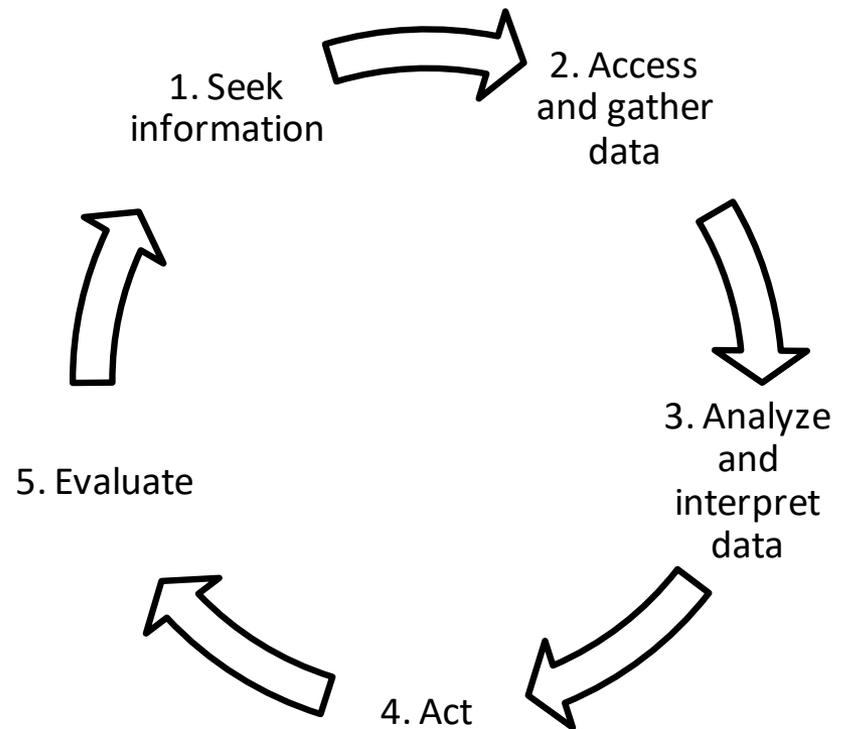
Types of data not included
(What this data source does not convey)

Example:

Does not show subgroups (for example, gender, English language learner status, and disability status.)
Does not show range of scores within each proficiency level.
Does not show proficiency within reading topics (for example, literary texts, informational texts).
Does not show proficiency by class/teacher.



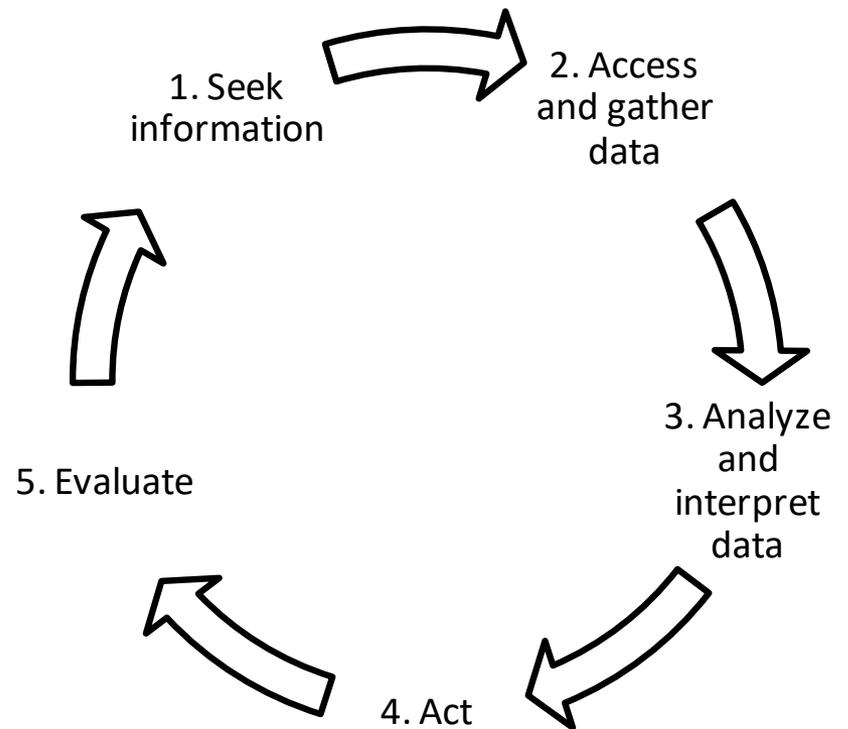
Discuss what data sources you have and what data sources you need to collect, then fill out Step 2: Access/Gather Data on your personal data plan template.





Step 3: Guiding questions

- *What do we observe in the data? What patterns do we notice?*
- *What can we infer about our students' strengths and challenges?*
- *Which challenge shall we address?*





Tips for creating data displays

Provide complete title, labels to axes, and key

- Name of assessment
- Date
- Content area
- Grades tested
- Number of students (n=___)

Make chart simple and easy to read

- Minimize distracting elements (no grid lines)
- Appropriate fonts & color
- Provide data point values where helpful
- Consistent scales when comparisons are needed

Source: Boudett, City, & Murnane (2013). *Data Wise: A Step-by-Step Guide to Using Assessment Data to Improve Teaching and Learning*. Harvard Education Press. p. 82.



I take actions based on my beliefs

I adopt beliefs

I draw conclusions

I make assumptions based on the meanings I added

I make inferences based on the data I selected

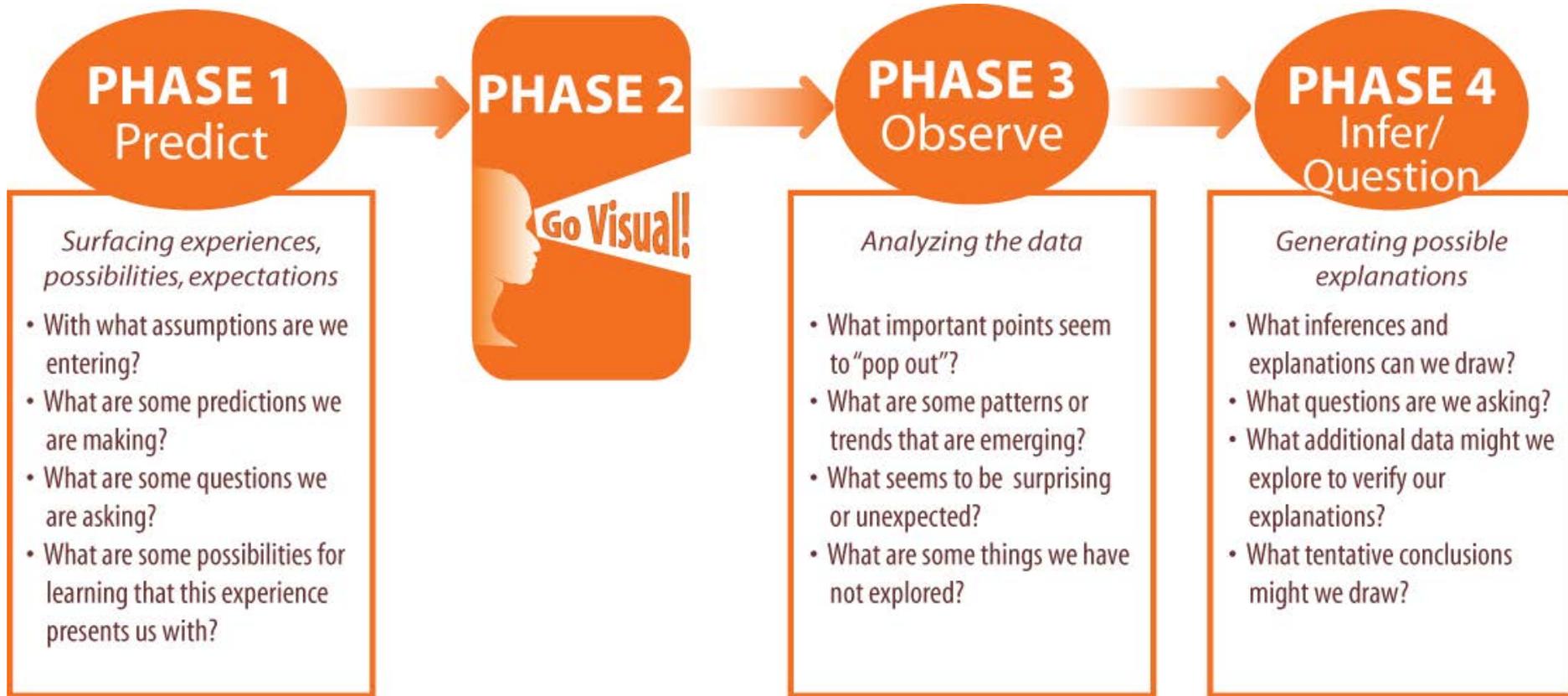
I select data from what I observe

Observable data & experiences



Ladder of Inference

Data-driven dialogue



© 2008 Corwin Press. All rights reserved. From *A Data Coach's Guide to Improving Learning for All Students* by N. Love, K. E. Stiles, S. Mundry & K. DiRanna

Select a student learning challenge

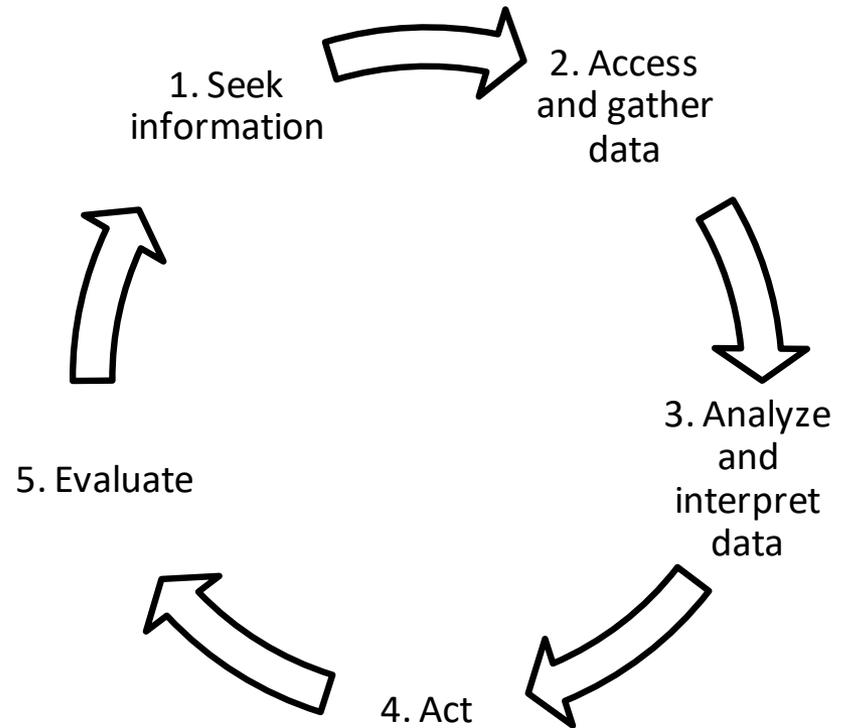
Examples:

- Based on assessments of early reading (for example, Diagnostic Reading Assessment), students are scoring only 45% on **letter-naming fluency**.
- Based on 5th-grade end-of-unit writing portfolios and state writing test results, students are having difficulty **citing evidence from literature or research** to support their arguments.
- Based on 7th-grade standardized math assessment results and current benchmark assessments, 14% of **students with disabilities meet the proficiency** standard, compared with 77% of students without disabilities.
- Based on 10th-grade student science lab reports and end-of-unit exams, students have difficulty **writing detailed discussions that compare and contrast findings** from the experiment with other sources or explanations.





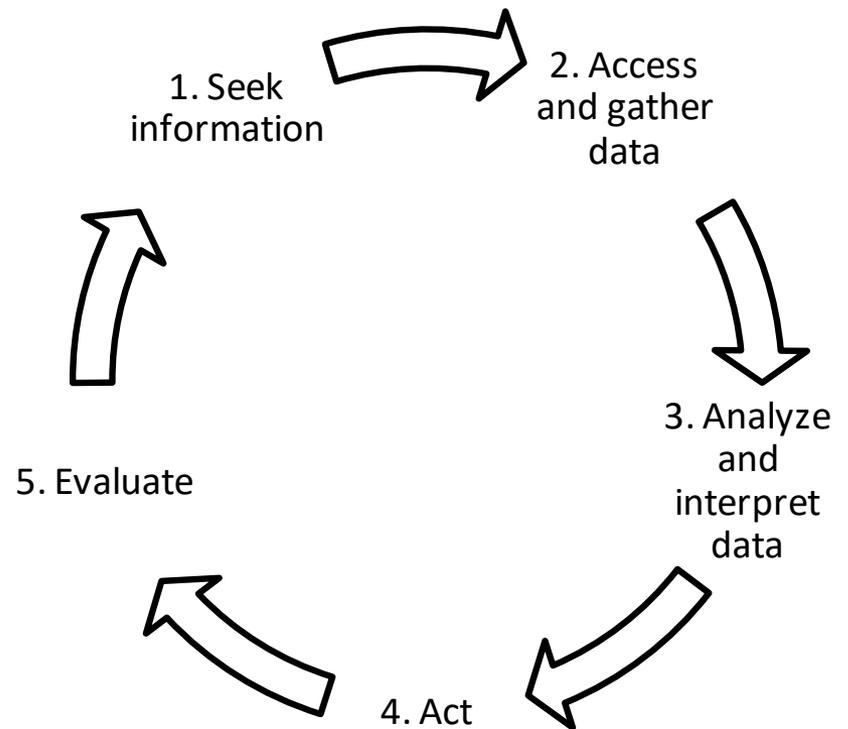
Using your data, discuss your conclusions from the data-driven dialogue, then fill out Step 3: Analyze/Interpret Data on your personal data plan template.





Step 4: Guiding questions

- *What goals do we have for our students' learning?*
- *What are the root causes that might have led to the patterns seen in student performance?*
- *What changes or action steps will address the goals we set for our students' learning?*





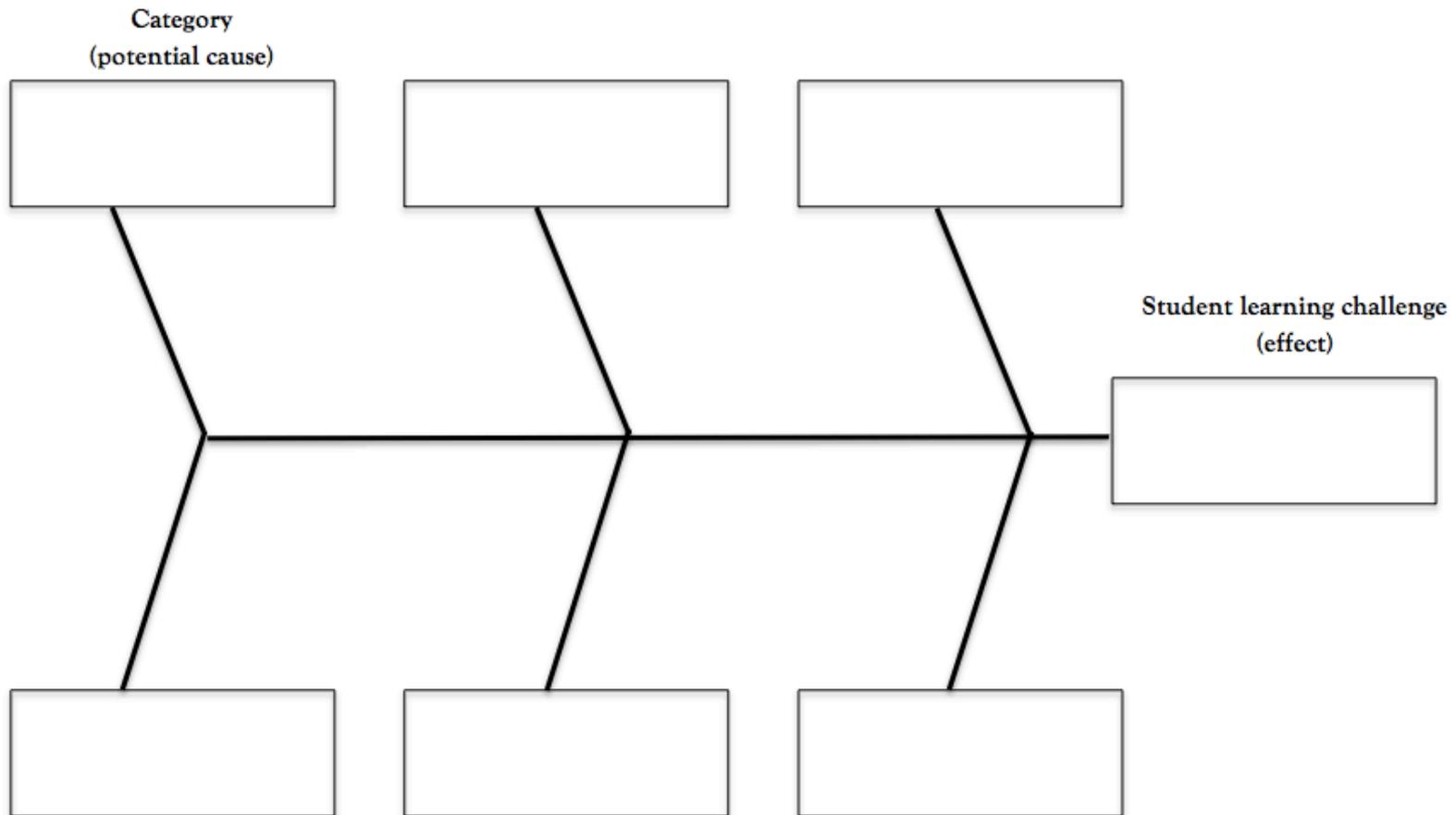
- S** • Specific
- M** • Measurable
- A** • Achievable
- R** • Realistic
- T** • Timely

Draft a SMART student learning goal that addresses the need you identified during data-driven dialogue.

Exchange your goal with another participant or team and provide feedback.



Handout 10: Fishbone diagram



Fishbone cause & effect analysis, round 1

What student learning challenge or conclusions from data analysis are we examining?

What categories at our school are related to this? (for example, curriculum, assessment)

What are potential causes? Are there patterns or trends in the causes?

Fishbone cause & effect analysis, round 2

What student learning challenge or conclusions from data analysis are we examining?

What categories at our school are related to this? (for example, curriculum, assessment)

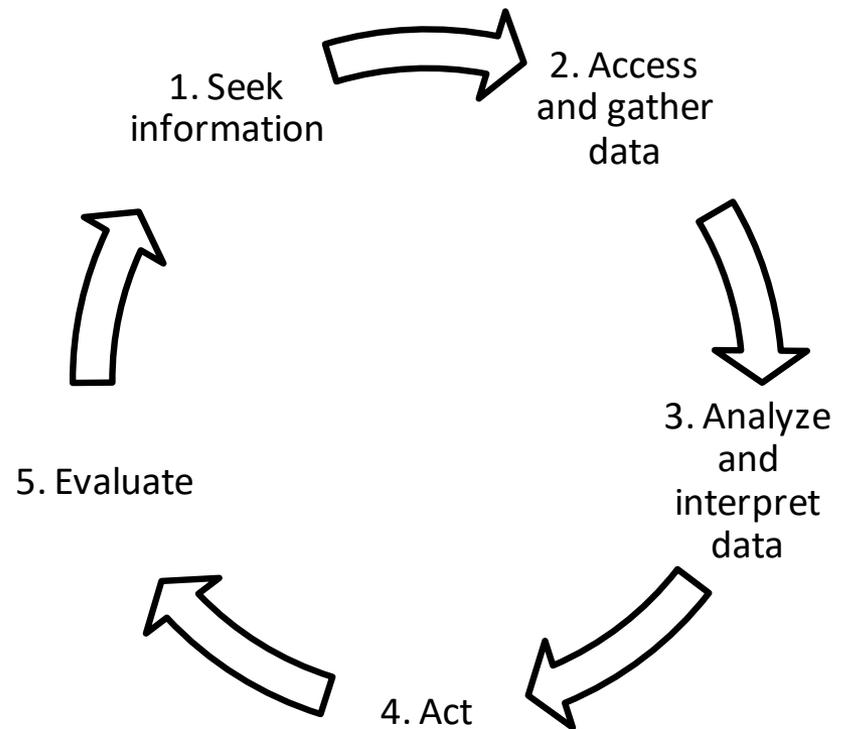
What are potential causes? Are there patterns or trends in the causes?

What action steps might address the patterns in the causes?



Discuss possible root causes and corresponding action steps using the Fishbone diagram.

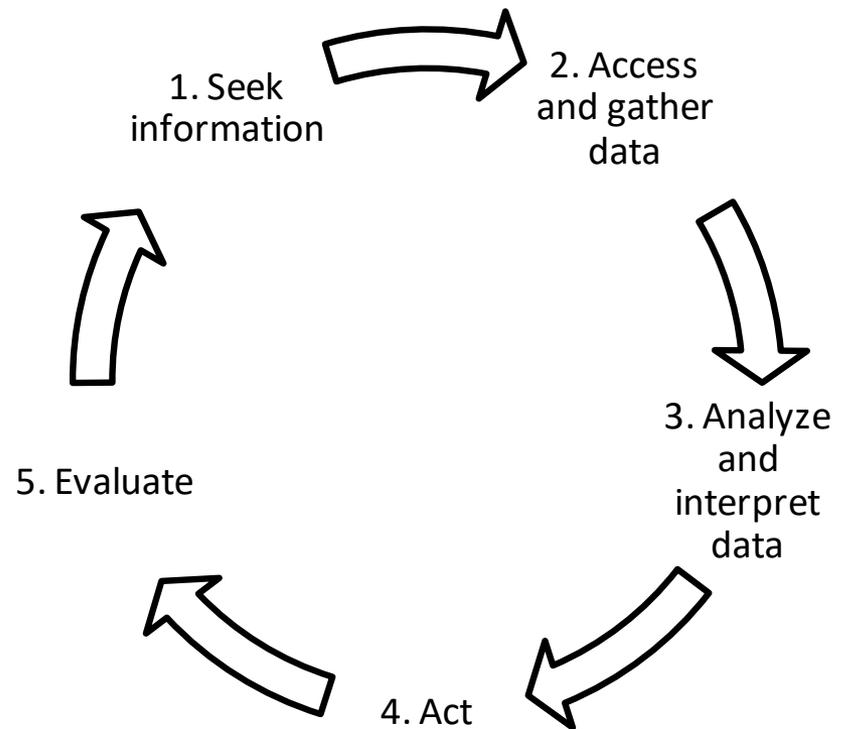
Prioritize your top action steps, then fill out Step 4: Act on your personal data plan template.





Step 5: Guiding questions

- *How effectively has the initial issue been resolved?*
- *What new concerns have arisen?*
- *Should we continue with our action plan or choose a new area of focus?*





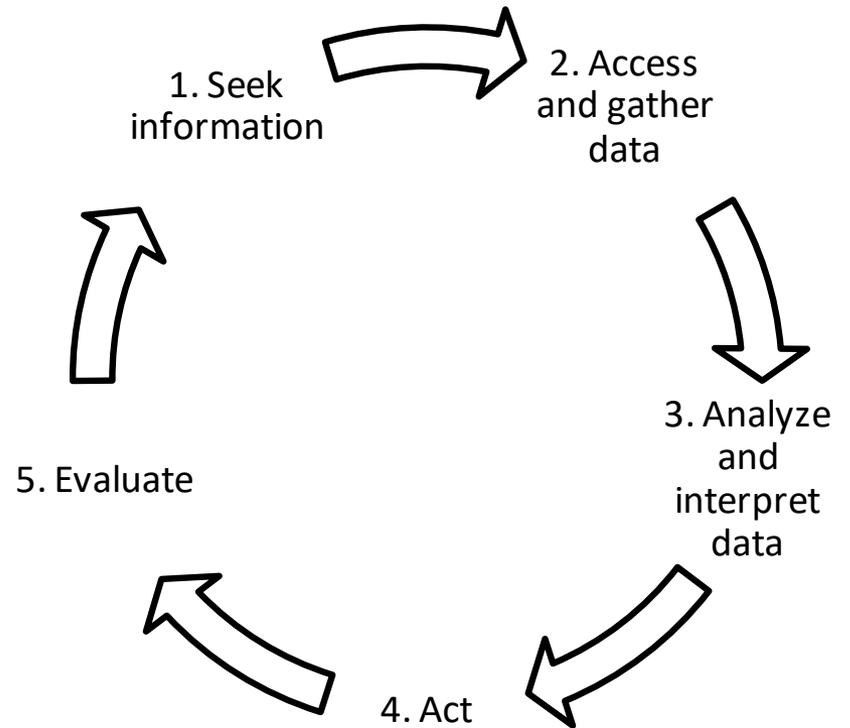
Considerations:

- Evidence of next steps in the action plan
- Documentation of how to monitor progress
 - What data will be collected?
 - When will that data be brought back for discussion?
- Ways for the teachers or team to **check in** on action steps and **reflect** on progress

What evidence do we have about what is working?
What are we learning?
What resources do we need?



Discuss how you might monitor or evaluate your action steps, then fill out the *first question only* in Step 5: Evaluate on your personal data plan template.



Discussion: taking next steps

- What were your key takeaways from this workshop?
- What will you apply from what you have learned?
- What unanswered questions do you have about data use?



Questions?



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Goals for today—revisited

During the workshop, participants will:

- Become familiar with an **inquiry framework** for interpreting data.
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- Engage in a **protocol to analyze data** and identify a student learning challenge.
- Generate **possible root causes** that contribute to a student learning challenge and possible related teacher actions.
- Draft **student learning goals and action plans**.
- Review how to **monitor results**.



Thank you!



Resources

Achinstein, B. (2002). Conflict amid community: The micropolitics of teacher collaboration. *Teachers College Record*, 104(3), 421–455. Retrieved from <http://eric.ed.gov/?q=Conflict+amid+community%3a+The+micropolitics+of+teacher+collaboration&id=EJ649782>.

Boudett, K. P., City, E. A., & Murnane, R. J. (Eds.) (2013). *Data wise: A step-by-step guide to using assessment results to improve teaching and learning, revised and expanded edition*. Cambridge, MA: Harvard Education Press.

Charalambous, C., & Silver, E. A. (2008, January). *Shifting from proving to improving: Using assessment as an integral part of instruction*. Paper presented at the annual meeting of the Association of Mathematics Teacher Educators, Tulsa, OK.

Copland, M. A. (2003). Leadership of inquiry: Building and sustaining capacity for school improvement. *Educational Evaluation and Policy Analysis*, 25(4), 375–395. Retrieved from <http://eric.ed.gov/?q=Leadership+of+inquiry%3a+Building+and+sustaining+capacity+for+school+improvement&id=EJ782423>

Doran, G. T. (1981). There's a S.M.A.R.T. way to write management's goals and objectives. *Management Review*, 70(11), 35–36.

Edmondson, A. (2002). The local and variegated nature of learning in organizations: A group- level perspective. *Organization Science*, 13(2), 128–146.

Gallimore, R., Ermeling, B., Saunders, W., & Goldenberg, C. (2009). Moving the learning of teaching closer to practice: Teacher education implications of school-based inquiry teams. *The Elementary School Journal*, 109(5), 537–553. Retrieved from <http://eric.ed.gov/?q=Moving+the+learning+of+teaching+closer+to+practice%3a+Teacher+education+implications+of+school-based+inquiry+teams&id=EJ844058>

Hamilton, L., Halverson, R., Jackson, S., Mandinach, E., Supovitz, J., & Wayman, J. (2009). *Using student achievement data to support instructional decision making* (NCEE 2009-4067). Washington, DC: National Center for Education Evaluation and Regional Assistance, Institute of Education Sciences, U.S. Department of Education. Retrieved from <http://ies.ed.gov/ncee/www/publications/practiceguides/>

Resources

Herman, J. L., Osmundson, E., & Dietel, R. (2010). *Benchmark assessment for improved learning* (AACC Report). Los Angeles, CA: University of California. Retrieved from <http://www.aacompcenter.org/cs/aacc/view/rs/25400>

Kekahio, W., & Baker, M. (2013). *Five steps for structuring data-informed conversations and action in education* (REL 2013–001). Washington, DC: U.S. Department of Education, Institute of Education Sciences, National Center for Education Evaluation and Regional Assistance, Regional Educational Laboratory Pacific. Retrieved from <http://ies.ed.gov/ncee/edlabs>

Love, N., Stiles, K. E., Mundry, S., and DiRanna, K. (2008). *The data coach's guide to improving learning for all students: Unleashing the power of collaborative inquiry*. Thousand Oaks, CA: Corwin Press.

McLaughlin, M. W., & Zarrow, J. (2001). Teachers engaged in evidence-based reform: Trajectories of teachers' inquiry, analysis, and action. In A. Lieberman & L. Miller (Eds.), *Teachers caught in the action: Professional development that matters* (pp. 79–101). New York: Teachers College Press.

National Forum on Education Statistics. (2012). *Forum Guide to Taking Action with Education Data*. (NFES 2013-801). U.S. Department of Education. Washington, DC: National Center for Education Statistics. Retrieved from <http://nces.ed.gov/pubs2013/2013801.pdf>

Nelson, T. H., Slavit, D., & Deuel, A. (2012). Two dimensions of an inquiry stance toward student-learning data. *Teachers College Record* (114). Retrieved from <http://eric.ed.gov/?q=Two+dimensions+of+an+inquiry+stance+toward+student-learning+data&id=EJ1001974>

Stokes, L. (2001). Lessons from an inquiring school: Forms of inquiry and conditions for teacher learning. In A. Lieberman & L. Miller (Eds.), *Teachers caught in the action: Professional development that matters* (pp. 141–158). New York: Teachers College Press.

Timperley, H. (2008). Evidence-informed conversations: Making a difference to student achievement. In L. M. Earl & H. Timperley (Eds.), *Professional learning conversations: Challenges in using evidence for improvement* (Vol. 1, pp. 69–79). Dordrecht: Springer.