Data Inquiry Guide

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Revision Log

Changes to this document made after April 30, 2023, will be noted in the table below.

Section	Page	Description of Revision	Revision Date

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About

What is the Data Inquiry Guide?

This resource was adapted from the original *District and School Data Team Toolkit*, published in 2012. Since that time, it has remained clear that data inquiry is paramount to data-informed decision making and continuous improvement. In support of data inquiry, other challenges were brought to the forefront: How do we navigate multiple frameworks, models, and support systems that inherently complement each other? How when applying data inquiry, do we keep the focus on equity and address opportunity gaps between student groups? How can we do the most with the limited resource of time?

The *Data Inquiry Guide* is the natural next iteration of OSPI's previously released *District and School Data Team Toolkit* (Toolkit). We present this updated version of the *Data Toolkit*, in collaboration with the Nine Educational Service Districts and our contracted Continuous Improvement Partners. Our intent in updating the toolkit was to:

- Reduce redundancy between data protocols to provide fewer protocols to meet the needs of the user.
- Provide access to protocols through this guide and individually online to allow for users to easily access the tools when needed.
- Update language to reflect current education terminology that moves away from the compliance-oriented No Child Left Behind Act to the continuous improvement language of the Every Student Succeeds Act.
- Place student equity front and center for the protocols, with an increased focus on using data to close student equity gaps.
- Move away from school-district-centric language to make the guide more inclusive for use by education leaders looking to use data inquiry to improve practices and student outcomes.
- Apply data inquiry to a PDSA cycle of inquiry.

Ensuring the effective use of data and data inquiry involves a variety of tasks and expertise. The first and most critical task is to collaboratively develop a vision for data use. This collaborative vision will vary depending on the education stakeholders, but it is important to ensure that all voices are included in the vision, especially those voices that have been historically marginalized; including but not limited to the voices of students, Native American community members, African American community members, and traditionally disenfranchised community members who are often the furthest from educational equity.

Who Should Use this Guide?

The *Data Inquiry Guide* was designed from a lens of continuous improvement to support district and school improvement planning efforts. The guide is available as a baseline resource for all educators and education leaders interested in supporting data use and the inquiry process within their communities and organizations.

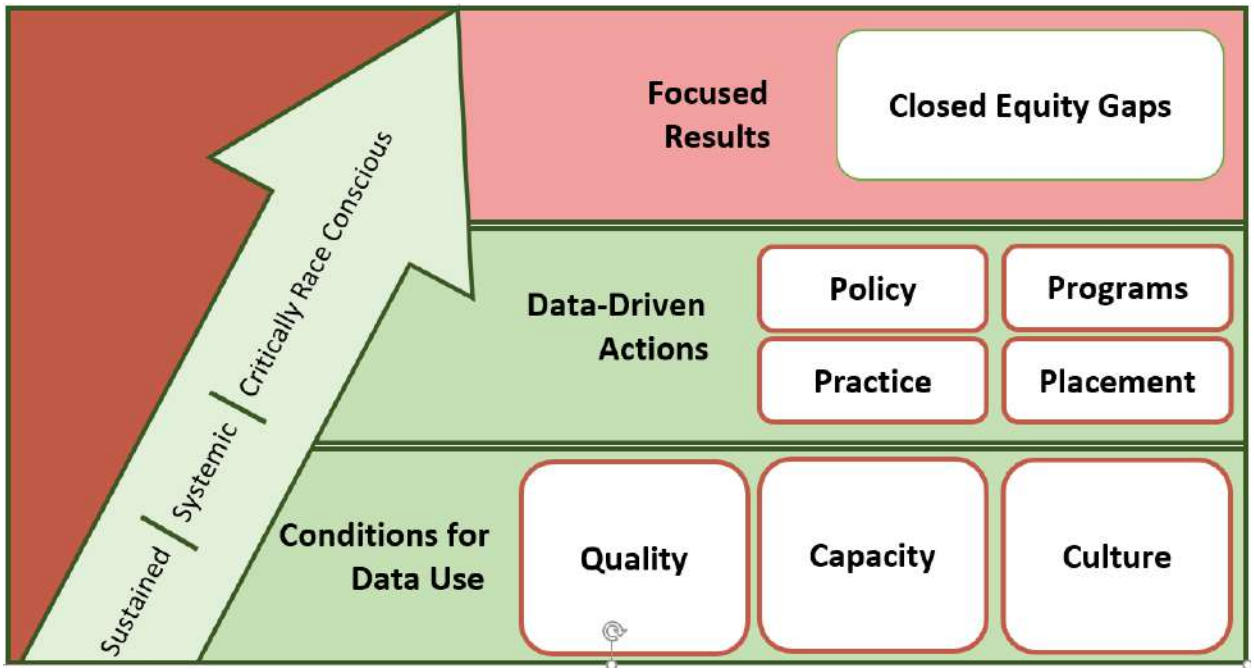
What is the Conceptual Base?

The research base for the guide is adapted from the Data Use Theory of Action developed by Public Consulting Group.[1] The theory of action, depicted in Figure 1, demonstrates the need to establish and develop conditions for data use as a building block for systematic, data-driven action. Such actions, in turn, should be designed to focus on improving student achievement. The theory of action was published in 2010; since that time, the term

[1] https://www.publicconsultinggroup.com/media/1573/edu_data-driven-district_practical-ideas_white_paper.pdf

"equity" has become an integral focus for educational improvement and data use. As a result, Figure 1 has been updated to include an equity-specific focus.

Figure 1. Data Use Theory of Action



According to the theory of action, data quality—a foundational aspect of data use to close equity gaps—encompasses access to disaggregated data for any data collections used to inform data-driven actions. In order to be equity focused, there needs to be an awareness and exploration of existing gaps between student demographics and characteristics. Using disaggregated data with the protocols in this guide is essential to identifying existing equity gaps and applying them to improvement goals and strategies.

Data Inquiry Guide – How to Navigate/Use?

The Data Inquiry Guide has been divided into two modules; each module contains its own set of activities that support conditions for continuous improvement. Though presented with protocols in a chronological order, the guide is meant to meet the user at the starting point they need.

MODULE 1 – BUILDING A FOUNDATION FOR DATA USE explores protocols and considerations that support an effective environment for data inquiry.

The activities in this module require some initial time investment and, in time, become routine. For example, an agency only needs one vision for the future which guides data use. However, when visions become reality or the environment changes, the vision may need to be revisited and updated.

There are four key activities included in this module:

1.1 Creating a Vision for Data Use
1.2 Writing Measurable Statements
1.3 Collaboration Mapping
1.4 Creating a Data Inventory

MODULE 2 – APPLYING DATA USE TO CYCLES OF INQUIRY applies handpicked protocols to each stage of a PDSA Cycle of Inquiry.

The activities in this module are for everyday data analysis. They require practice in order to develop effective data use habits and embody a culture of data use. Further, in the spirit of data inquiry, these protocols can be repeated indefinitely. For example, when identifying focus and clarifying questions, questions often lead to more questions. Continuing with this example, teams may find new data to answer these new questions which in turn generate additional questions. Thereby resulting in an advanced understanding of the system.

There are four key activities included in this module:

2.1 Developing Focus Questions to Initiate Inquiry
2.2 Review the Data
2.3 Writing Problem Statements
2.4 Pursuing Root Cause and Problems of Practice

Module 1 – Building a Foundation for Data Use

This module is dedicated to setting the conditions for effective data use, thereby supporting continuous improvement. In order to effectively use data, it needs to be defined. Data comes from the Latin root datum, which means "something given." Put another way, data is information that has been given, observed, and/or collected. The bigger question is why? Why is information valuable? Why use data? Consider why we use data every day.

> *Which jacket should I wear today (checks weather forecast)? What time should I leave for my appointment (checks GPS application)? Where should I get lunch today (web search online)?*

In one short statement, data are used to answer questions. Four common pathways for data use include:

- Seeking new understanding – find new angles, perspectives, and learnings
- Exploring current environment – monitor for strengths and weaknesses
- Identifying causality – discover how elements interact
- Measuring progress – determine the effectiveness of behaviors

Building on these pathways, data is not about what is already known; it is about learning something new. To that point, data use requires being open to learning something new. Fostering a culture of learning will support teams in navigating data collectively. Having a structure or process to follow when using data can support this learning culture. Data inquiry is a process for data informed decision making that centers on developing a deeper understanding of a system through utilization of a repetition cycle of questioning, analyzing, measuring, and evaluating. It will take time and practice, but the more you practice, the faster the process becomes.

Module 1 Activities

Each of the key activities represented in this module are separate attachments. Here is a quick summary of each activity:

1.1 CREATING A VISION FOR DATA USE

Developing a vision, a hope for the future, a desired outcome, or ideal is critical to effective data use. Without this sense of purpose, reviewing data can feel aimless or be an ineffective use of time. Further, this is the most critical stage for engaging the voice and perspectives of respective communities. In education this includes, but is not limited to; students, families, community members, and staff. Setting a vision becomes a basis for all decisions and data priorities moving forward, which is a great place to lead with inclusion. Use this protocol to inclusively develop a shared ideal or vision of the future. This is not simply a short statement; this is a story which requires a lot of thought and detail.

1.2 WRITING MEASURABLE STATEMENTS

Once a vision for the future is identified, the next step is to identify small steps that will help get closer to that future. This protocol supports goal setting that is measurable. Consider the following—if your goals are not measurable, how do you know they are accomplished?

1.3 COLLABORATION MAPPING

This is a supplemental tool that supports who to communicate and engage with, in what ways, when, and how. In order to address equity gaps, inclusive practices should be engaged when developing the vision for the future, setting goals, interpreting data, and making action plans.

1.4 CREATING A DATA INVENTORY

This tool allows teams to record and track what data sources are in use, what data elements are available, and how they are being used.

Terminology

Here are some key terms and concepts that may present themselves in your data inquiry journey.

Aggregation. Data that are presented in summary (as opposed to individual student-level data or data broken down by subgroup).

Causation. A relationship in which one action or event is the direct consequence of another.

Correlation. A mutual relation between two or more things. Correlation does not imply causation.

Cycle of Inquiry and Action. The cycle of inquiry is a process in which educators analyze data—such as demographic, perceptual, school process, and student achievement data—in order to understand how these elements are interrelated and what they suggest about students' learning needs. As a multistep process, the cycle of inquiry often involves analyzing data to better understand student needs, developing hypotheses about instructional practice, formulating and implementing action plans to improve student learning and achievement, and then once again analyzing data to evaluate student progress and inform next steps.

Data. Data are empirical pieces of information that educators can draw upon to make a variety of instructional and organizational decisions. By themselves, data are not evidence—it takes concepts, theories, and interpretive frames of references that are applied to the data to provide evidence.

Data Analysis. Data analysis is the practice of supporting data use through a variety of techniques that include, but are not limited to, processing raw data, producing data displays/dashboards, and interpreting data.

Data Culture. Data culture describes a school and/or district environment that includes attitudes, values, goals, norms of behavior, and practices accompanied by an explicit vision for data use by leadership and that characterize a group's appreciation for the importance and power that data can bring to the decision-making process. It also includes the recognition that data collection is a necessary part of an educator's responsibilities and that the use of data to influence and inform practice is an essential tool that will be used frequently. Widespread data literacy among teachers, administrators, and students is a salient characteristic of a data-driven school culture.

Data Inquiry. A process for data-informed decision making that centers on developing a deeper understanding by utilizing a repetition cycle of questioning, analyzing, measuring, and evaluating.

Data Inventory. A catalogue of the data available, who controls the data, the location of the data, accessibility, and how the data are being used.

Data Literacy. The ability to ask and answer questions about collecting, analyzing, and making sense of data is known as data literacy.

Data Quality. The attributes of a data set that make data useful; such as validity, reliability, completeness, accuracy, timeliness, and relevance to the question being investigated.

Disaggregation. Summary data split into different subgroups (e.g., gender, race, ethnicity, economic status).

Disproportionality. Disproportionality occurs when a given subgroup is represented in a larger or smaller proportion in a particular program or educational environment than would be predicted based on the representation of that subgroup in a total population. Data on disproportionality can be viewed in several ways. Westat's technical assistance document, Methods for Assessing Racial/Ethnic Disproportionality in Special Education: A Technical Assistance Guide (Revised), provides more information about these measures, including step-by-step instructions on how to calculate them, discussions of how to interpret each, and a summary of their strengths and weaknesses. This document is available at https://ideadata.org/sites/default/files/media/documents/2017-09/idc_ta_guide_for_508-010716.pdf

Hypothesis. A hypothesis is a tentative inference made in order to draw out and test its logical or empirical consequences. Within the cycle of inquiry, it is an evidence-based inference about students' learning needs that teachers can test using instructional modifications and follow-up data about student performance.

Inference. Formed from the act of inferring or passing from one proposition, statement, or judgment considered as true to another whose truth is believed to follow from that of the former. Inferences are formed from observations of factual data. Inferences can also be made from statistical sample data to generalizations (as of the value of population parameters) usually with calculated degrees of certainty.

Progress Monitoring. Progress monitoring is used to assess students' academic performance, to quantify a student rate of improvement or responsiveness to instruction, and to evaluate the effectiveness of instruction. Progress monitoring can be implemented with individual students or an entire class.

Problem(s) of practice. The action, or lack of action, of the adults in the system that contribute to problems for their students.

Problem Statement. A clear, succinct, evidence-based statement of the problem revealed through analysis of data related to the issue under investigation.

Question Types.

- **Focusing Question**. A high-level question related to an issue of interest that serves to initiate an inquiry and suggest the preliminary data that need to be collected and analyzed.
- **Clarifying Question**. A follow-up question that guides deeper inquiry into the initial issue and suggests additional data that need to be collected and analyzed.

Reliability. The degree to which the results of an assessment are dependable and consistently measure particular student knowledge and/or skills.

Reliability is an indication of the consistency of scores across raters, over time, or across different tasks or items that measure the same thing.

Thus, reliability may be expressed as (1) the relationship between test items intended to measure the same skill or knowledge (item reliability), (2) the relationship between two administrations of the same test—or comparable tests—to the same student or students (test/retest reliability), or (3) the degree of agreement between two or more raters (rater reliability). An unreliable assessment cannot be valid.

Root Cause. Without a formal definition, a root cause can be compared to Newton's Third Law; "for every **action**, there is an equal and opposite **reaction**." A root cause is the initial action that sparked a chain reaction between causal factors, leading to our current reality.

Stakeholder. Any individual that is involved with or is affected by a course of action or who has a vested interest in the enterprise, its policies, practices, and outcomes.

Triangulation. A process that makes data more reliable and valid by using different sources of data (respondents, time, location), different methods (interviews, assessments, questionnaires) and different types (quantitative and qualitative) next to each other. The advantages of one method can compensate for the disadvantage of the other.

Vision Statement. A description of what is aspired to. The vision statement describes the future state that the organization would like to achieve.

References

Merriam-Webster. (2011). Retrieved from Merriam-Webster Dictionary: https://www.merriam-webster.com/

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Module 2 – Applying Data Use to Cycles of Inquiry

The purpose of this module is to connect data use protocols or data inquiry with a Plan, Do, Study, Act (PDSA) cycle of inquiry process. Within a PDSA cycle, data are typically reviewed during the planning, doing, and studying phases; each with a slightly different outcome in mind.

Module 2 Activities

Each of the key activities represented in this module are separate attachments. Here is a quick summary of each activity.

2.1 DEVELOPING FOCUS QUESTIONS TO INITIATE INQUIRY

This is relatively quick activity that builds upon the vison and goal setting from Module 1. Identify one of the goals that supports reaching the vision and identify questions. What wonderings or questions does the team and/or partners have about that goal? Once questions are identified, for each question identify the information or data needed to answer that question. This activity is generally accomplished during the Plan phase of a PDSA cycle.

2.2 REVIEWING THE DATA

This is likely the most repeated activity in the entire guide, since it can be used in the Plan, Do, and Study phases of a PDSA cycle. In this activity, there are several protocols that support engagement and the unpacking of bias when looking at data. Participants have a chance to make predictions about the data, state observations, and explore inferences. This activity is continuous, since it ends with the identification of clarifying questions and relevant data for the next data review. Do not let this activity's repetition delay your team from getting to root cause analysis.

2.3 WRITING PROBLEM STATEMENTS

Serving as a transitional activity, this activity connects the goals, the data reviewed, and uses them to formulate a problem statement. Essentially, problem statements are the barriers or challenges that need to be addressed in order to achieve our goals. This activity is part of the Plan phase of a PDSA cycle.

2.4 PURSUING ROOT CAUSE AND PROBLEMS OF PRACTICE

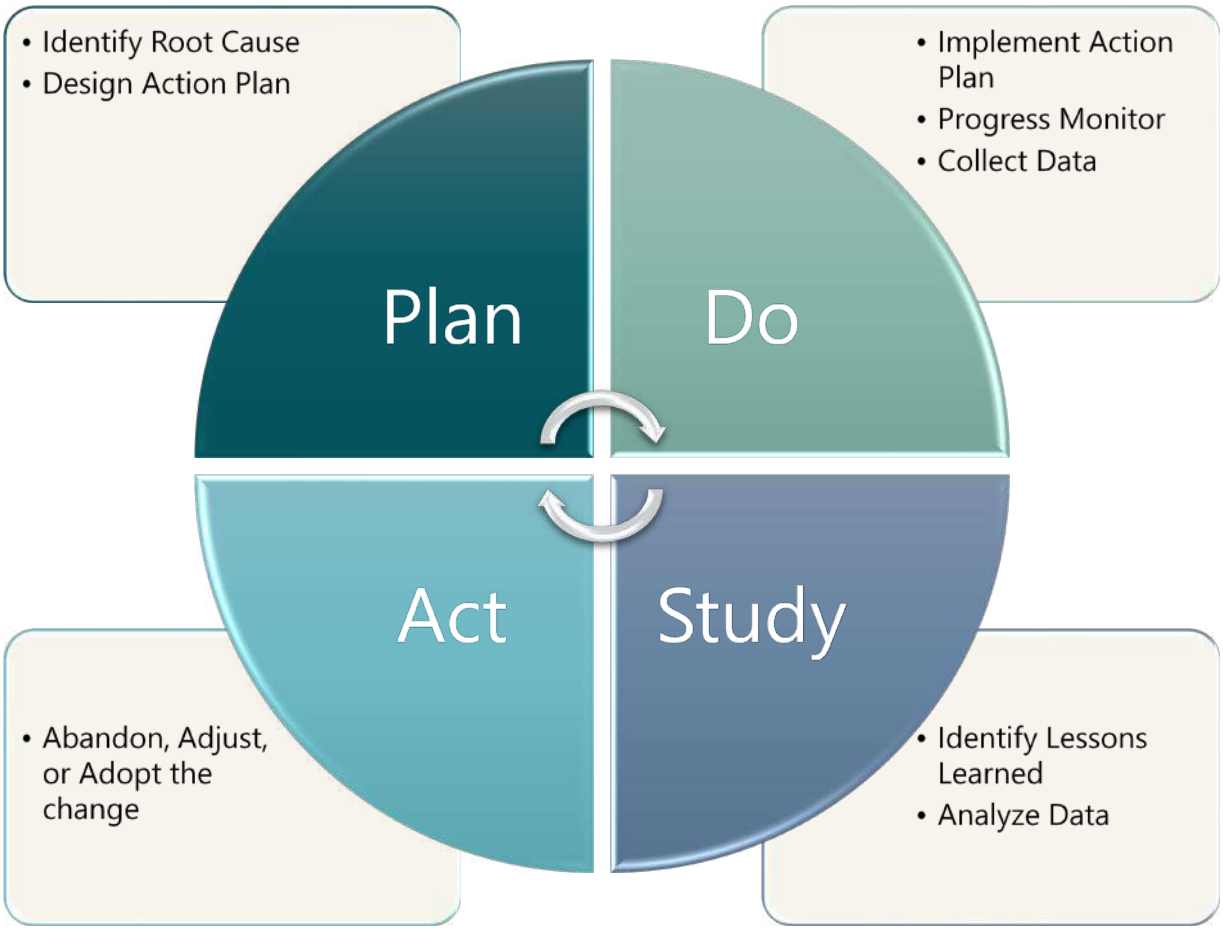
This activity represents a merge of what used to be five protocols. The purpose is to explore why the system is producing the current reality seen. During this activity, teams will identify major causal categories that impact the system and drill down through dialogue to discover a root cause. Since this activity can yield many potential causes, there is a protocol for ranking the team's significance and control over the identified causes. The root cause should represent the team's contributions to the system. This activity is part of the Plan phase of a PDSA cycle.

Cycles of Inquiry – PDSA

As you have read the activities within this module, the majority are all focused on the Plan phase of a PDSA cycle. The cycle of inquiry begins with Plan. In the last module, it was shared that data are information used to answer questions. Essentially, this is what research is all about—answering questions by applying change ideas and observing change its impact on the data. When applying this to continuous improvement in education, we are applying and observing changes to the system in order to determine what gets us closer to the vision of the future. See the image below for a quick overview of the four phases of PDSA.

REVIEWING THE DATA - APPLIED TO PLAN, DO, STUDY

Though much of the emphasis in this guide is on the planning phase, Plan is not the only phase of PDSA when data are review. That is why the *2.2 Reviewing the Data* activity is so versatile, it can be applied to these three stages. The end goal of this activity changes for each phase in PDSA.



Plan

The Plan phase reviews data to identify a root cause and/or problem of practice and then designs an action plan that should be implemented during the Do or implementation phase.

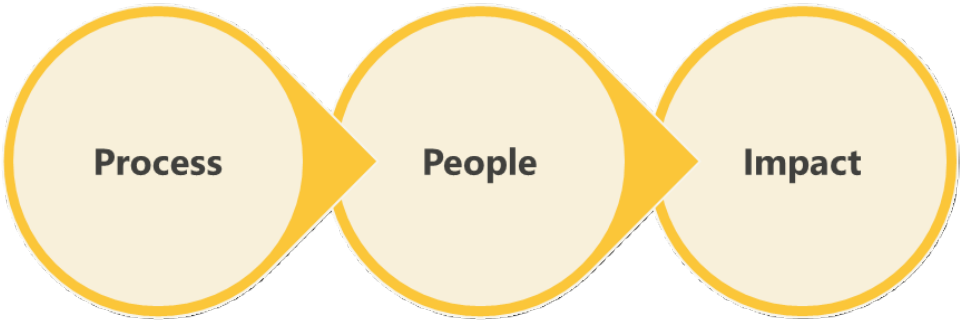
End Goal: develop a deeper understanding of the system and support the identification of problems for root cause analysis. Completing the plan phase requires that an action plan is made, which is then implemented during the do phase.

Plan – here are some data-themed questions to ensure are answered on the action plan.

What question are we attempting to answer?	What data will answer our question?	What data will help us monitor our progress?	What threshold would require a change to the plan?
How is that data collected?	**Where is that data kept?**	**Who is responsible for that data?**	**When is that data reviewed?**

Do

Progress is monitored during the Do phase in order to determine the success of implementation. Three things to consider monitoring:



End Goal: Assess the quality of implementation. When reviewing the data, are we implementing the action plan with fidelity? Are we having a positive impact on the system?

DO – here are some questions to answer when reviewing data for progress monitoring.

What movement are we seeing in the data?	Are the data encouraging the plan or influencing change to the plan?	What successes are we seeing?	What challenges are we seeing?	What can we do differently?	Are staff doing what is outlined in the action plan?

Study

In the Study phase, data collected during implementation are reviewed to determine the outcomes and lessons learned from implementation to inform the Act phase.

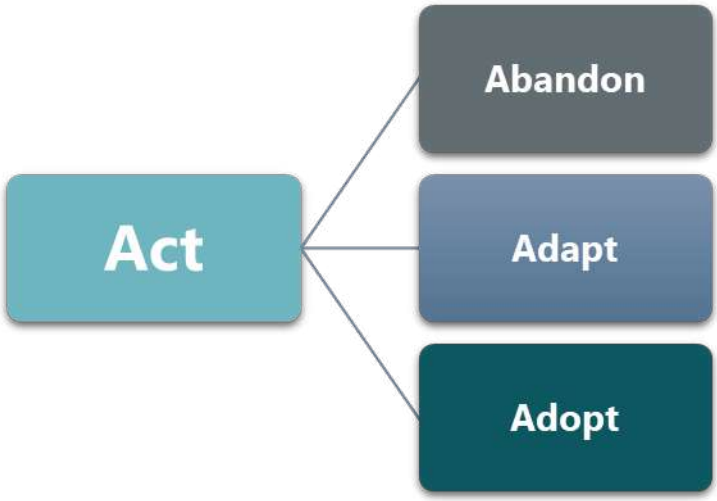
End goal: answer the following questions: did the action plan work? Are we closer to achieving the goals? Did we achieve the goal?

Study – questions to answer when measuring outcomes.

What movement are we seeing in the data?	Did this change help us move closer to our goal?	What successes are we seeing?	What challenges are we seeing?	What can we do differently?	Did we implement with fidelity?

Act

Act we like to keep very simple. It is a one-step process; make a decision based on the data reviewed in the Study phase. Was the implementation unsuccessful? In which case, should we abandon the change idea? Or, was it unsuccessful and we should make some adjustments before trying again? Or, was it successful and we should make adjustments before continuing? Or, was it successful and we should adopt the change idea as is?



End Goal: Make a decision and identify next steps. Consider some of the following as next steps:

- Review the notes from your team's 2.4 root cause analysis. Are there other potential root causes to inform your next action plan?
- Review the notes from your team's 2.3 problem statement activity. Are there other problem statements to explore?
- Review the notes from your team's 2.2 data review activity. Are there other observations in the data to address?
- Review the notes from your team's 2.1 focus questions. Are there other questions that you have yet to explore?
- Or simply, start over from the beginning.

ACT – after reviewing the data, what is your decision?

Abandon – What will we do instead?	**Adapt – What will we do differently?**	**Adopt – Should we expand our implementation? Or continue to monitor pilot implementation?**

Conclusion

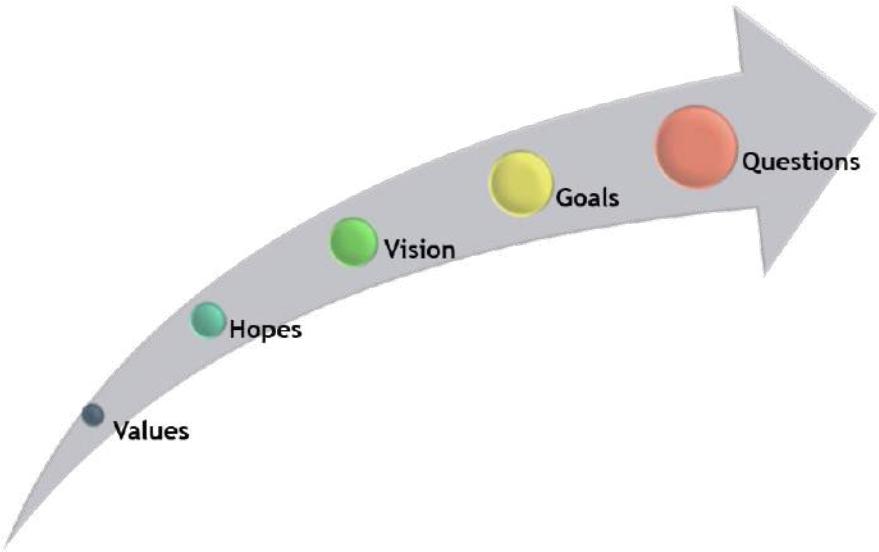
Congratulations for making it through the Data Inquiry Guide. This process is not about reaching a conclusion but rather building habits and culture of data use. It is our assumption and belief that by fostering a culture of data inquiry, a culture of learning, we can improve the conditions that lead to continuous improvement.

All the activities and protocols included within this guide are to be used as needed. What is most important is that it meets your needs. It is expected and a best practice to adjust the protocols to meet your current needs.

Module 1 Protocols

1.1 Creating a Vision for Data Use

Goal: To inclusively develop a shared vision that will guide your data inquiry



Most organizations have some form of vision and/or mission statement. But where did these statements come from? Who made them? What perspective, values, and bias informed the collective vision of the future? Bias often has a negative connotation, related to positive and negative prejudice. Here, bias refers to lived experiences and values that guide decision making. Team members' decision making is limited to the information available or bias. Having an inclusively diverse team and community allows more perspectives and more values. This is a critical step in leading with equity and inclusion in mind. Values and lived experiences inform people's hopes for the future, which in turn informs vision, which is a basis for goal setting, which provides focus to the questions sought to be answered through data.

Consider the following: How can the team be inclusive when developing a vision for the future? Is the team aware of the diverse voices/perspectives within its communities? How can the team engage the voices of students, families, community, and staff at every level?

DIRECTIONS

Part 1: Finding a Shared Strategic Focus

A vision statement looks to the future and defines a desired end state. The vision describes what the environment would look like if all the team's best ideas were realized. The purpose of this activity is to begin to articulate a vision or ideal that as a community the team can work to make a reality. This vision of a better future informs goal setting and the use of data.

1. Take about five minutes individually to write ideas of what an ideal future looks like. Think about these questions to draft the vision:
    - What do you want the future of data use in the district to look like?
    - What data use practices are needed to fulfill the district's mission?
    - What organizational structures need to be in place to make effective data use possible?
2. After drafting the statement, dissect it into its major component ideas. Write each idea on a separate sticky note.

Example:

Idea for ideal data use = High-quality data are collected and disseminated to appropriate stakeholders in a timely manner so that all decisions can be informed by data.

Dissection (one per sticky note)

- High quality data are needed
- All stakeholders need the capacity to analyze data
- An organizational structure is in place for collection and dissemination
- There is an organizational expectation that all decisions are informed by data

3. Post your component ideas, along with those of your colleagues, on one large piece of chart paper. As a group, sort all the ideas so that similar ideas are grouped together. Sets and subsets of ideas will emerge through this process.
4. Discuss and arrange the notes until all team members are satisfied with the groupings. Give each grouping a descriptive title such as "informed decision making."
5. As a group, review the assembled statements and add any key ideas that seem to be missing. Reach consensus on any ideas that should be removed.
6. What remains on the chart paper is an outline of a shared strategic focus. The diagram outlines priority areas and is beginning to paint a picture of what systemic data use in the school would look like (e.g., the desired end state).

Part 2: Act on the Shared Strategic Focus

1. If the district already has a vision statement that includes data use:
    - Compare it to the shared strategic focus that was just created. Determine if the existing vision is in alignment with the shared strategic focus. If it is not aligned, consider whether it is the existing vision or the strategic focus that needs revising.
    - Reach consensus on the changes that need to be made and delegate several members of the team to make the revisions for review.
    - Develop a plan to gather feedback from stakeholders on the draft of the revised vision statement.
2. If the district does not have an existing vision statement which includes data use, move on to Part 3 of this activity.

Part 3: Develop a Vision Statement

1. Writing a succinct, meaningful vision statement by committee is virtually impossible. It is; however, not only possible but desirable to have a group provide input on the content of the statement and delegate one or two team members to draft the statement. The following steps will help each team member use the shared strategic focus to contribute to the draft vision statement.
2. The facilitator should write the following sentence starter on a new piece of chart paper:

    Our district will "*accomplish*" by "*methods or strategies*" that will be used to achieve the vision.

Examples of *Accomplish*

- Use data to …
- Collect and analyze data to …
- Create a culture of data use
- Support the use of data by all staff members
- Inform all decisions with data
- Allocate resources based on analysis of relevant data

Examples of *Methods or Strategies*

- Creating school data teams
- Collecting and disseminating high-quality data in a timely manner
- Supporting data use to inform all decisions

Example of a Completed Statement: Our district will *use data to inform all decisions* by *collecting and disseminating high-quality data to all stakeholders in a timely manner*.

3. Each member of the team should use the sentence starter as a guide to help them write a draft vision statement that incorporates the team's *shared strategic focus* on a piece of chart paper.
4. As a team, review the statements. Look for opportunities to combine similar ideas and identify unique ideas.
5. Merge all the ideas into a clear statement of your district's vision for data use. The statement may be multifaceted or bulleted, but it should include the essential elements of the original sentence starter:
    - Accomplishments or end states
    - Methods or strategies that will be used to achieve the vision
6. Delegate several people to refine the statement and bring it back to the full team at a subsequent meeting for review. At that meeting, ensure that the draft statement captures the team's priorities and vision for data use in the district.

Part 4: Follow-Up Activities

1. Once the team has reached consensus on a succinct vision statement, develop a memo to all stakeholders sharing the vision and the rationale for its development. Solicit feedback on the vision from stakeholders. Consider presenting it at faculty meetings in schools and within department meetings in the district office. Sharing your new vision through personal communication and in open forums will return excellent feedback and help to expand the vision's support districtwide.
2. Refine the vision statement based on stakeholder feedback.
3. Take the refined vision statement to the district's governing body for adoption.

1.2 Writing Measurable Statements

Goal: Learn how to create and practice creating measurable outcome targets and implementation goals

Setting measurable goals is vital to reaching a desired outcome and making a vision of the future a reality. The key word here is measurable, so that the team can determine progress toward the desired end result.

DIRECTIONS

1. Review *Elements of a Well-Written Measurable Statement*.
2. Using the *Elements of a Well-Written Measurable Statement* document as a guide, each data team member should create a well-written statement by:
    - Identifying each of the four elements of a well-written measurable statement
    - Writing a clear target/goal statement
3. As a data team, reach consensus on the most appropriate measurable statement for each scenario. Possible answers are included in *Possible Answers to Scenarios*. The team may want to consult the answers after discussion.

Elements of a Well-Written Measurable Statement

Vague Goal or Desired Outcome: Increase the graduation rate of all students.

Vague Goal Statement: Increase the percentage of students graduating with their cohort.

A clearer and more useful statement would help a district or school focus on a specific student group and establish a time frame for meeting the target goal. A clearer and more useful goal statement can be created by focusing on the following questions.[2]

1. **What will change?**
   An increase in the percentage of students labelled as English language learners graduating with their cohort
2. **For what population?**
   Students labelled as English language learners at any point after they enter the graduation cohort
3. **By how much?**
   For students who are labelled as or identify as English language learners, the overall growth will be 32.4 percentage points in 10 years. For this group, annual growth targets will be 3.2 percentage points
4. **By when?**
   By the end of the 2026–2027 school year

[2] This example intentionally aligns with the long-term goal for increasing the four-year adjusted cohort graduation rate as described in Washington's ESSA Consolidated Plan as amended on February 3, 2020 (pp. 26–28). The amended plan is located at https://www.k12.wa.us/sites/default/files/public/esea/essa/pubdocs/WashingtonStateESSAConsolidatedPlanAmendment.pdf

The resulting measurable statement (compare to the vague statement above):

Increase the four-year adjusted cohort graduation rate of students who are labelled English language learners to 90 percent by 2027.

A Few Words about Targets and Timeframes

Sometimes the ultimate target or the timeframe in which the goal is reached are mandated by state or district policies that are outside of a school district's or school's control. For example, the Washington's ESSA Consolidated Plan established a 90 percent graduation rate for the four-year adjusted cohort by 2027. If a target and timeframe have been mandated, the gap between the current proficiency level and the target level could be broken down into annual incremental targets if desired.

$$\frac{\text{(Target level - current level)}}{\text{(Target year - current test year)}}$$

If an external target and timeframe are not given, it is important to set them in a meaningful, realistic, and equitable way.

- A meaningful goal is one that would have a greater impact on student outcomes than another less meaningful goal; for example, it may be more meaningful to have a goal set for the four-year cohort graduation than a goal for the percentage of students taking AP courses.
- A realistic goal is one that is challenging but attainable within the given timeframe. Setting unrealistic goals will not engage school district and school staff; instead it will likely only discourage improvement efforts.
- An equitable goal is one that focuses on student groups and not all students. By intentionally identifying *and* naming student groups within the goal, it recognizes that some students are further from educational justice and will need more support to meet the goal than other student groups. If all student groups meet the goal, then the "all students" student group will meet the goal—however, the reverse is not also true.

Example

Scenario 1: Learner-Centered Problem End State Description

The Hidden Valley School District recently purchased a reading program for grades 3–6, which was implemented for the first time this year (2020) with students who are labelled English language learners (ELs) with special needs at the beginning of the year. The district wants to determine if the program has been effective in reducing the equity gap between the target student group and students who are labelled ELs, as measured by the Measurements of Student Progress reading test, from 10 percentage points to 0 by the test end-of-year assessment that will take place in two more years (2022).

Elements:

- What will change?
- For whom?
- By how much?
- By when?

Statement:

Possible Answers to Scenarios

Scenario 1

The Hidden Valley School District recently purchased a reading program for grades 3–6, which was implemented for the first time this year (2020) with students who are labelled English language learners (ELs) with special needs at the beginning of the year. The district wants to determine if the program has been effective in reducing the equity gap between the target student group and students who are labelled ELs, as measured by the Measurements of Student Progress reading test, from 10 percentage points to 0 by the test end-of-year assessment that will take place in two more years (2022).

Elements:

- What will change? Reduction in the equity gap on the reading assessment
- For whom? Students labelled as English language learners with special needs and students labelled as ELs
- By how much? 10 percentage points
- By when? By the end of the 2021–2022 school year

Statement:

Decrease the equity gap between students who are labelled as EL with special needs and students labelled as EL, as measured by the MSP reading test, from 10 percentage points on the 2019 tests to 0 on the 2022 test.

1.3 Collaboration Mapping

Goal: To identify and map key partners to engage with and the frequency and form of communication used

Being inclusive in continuous improvement and continuous learning requires knowing who to include. This may require the review of data in order to know who lives in the community. This work takes time and will have many iterations. If over time the list of collaborators, stakeholders, partners, etc.; continues to grow and diversify, the team is on the right track.

Considerations: What are the demographics of the school? How does this differ from the community? For example, many schools may find that they have a diverse school district and a homogenous community or vice versa. Consider the location of the district. Are there environmental factors that inform engagement? For example, does the district/agency reside on existing or historical lands of indigenous tribes? Everyone wants to feel heard and have a sense of belonging. For every collaborator, stakeholder, and voice; is there a clear path for them to feel heard?

DIRECTIONS

1. As a team, review the elements of the **Collaboration Mapping Template**.
2. Reach consensus on any modifications that should be made to the template to best fit the situation. The protocol should meet the team's needs—do not adapt needs to fit the protocol.
3. Appoint a team member to modify the template, if necessary, and make the revised version available to all team members.
4. Brainstorm a list of possible stakeholders.
5. Review demographic data for the team's agency, district, and/or community. Based on this information, should anyone be added to the list?
6. Add the final list to the template. Reminder, the team can always come back to the template to add more voices.
7. For each stakeholder identified, map out opportunities to send and receive communication.

Stakeholder List

Stakeholder Name	Demographic	Existing Engagement	Opportunities for Engagement
Staff	Veteran (2+ years) and new staff (less than 2 years)	Staff Engagement Committee Anonymous comment box Staff meeting, etc.	Organizational culture engagement

Communication Plan

Name	Purpose	Audience	Facilitated by	Medium (email, face to face, newsletter)	Frequency
Staff	Maintain 2-way communication	All Staff	Executive Director	Newsletter, with survey	Monthly
Community	Engage in continuous improvement	Community partner(s) Parents Tribal representative(s)	Community Liaison	Face-to-face Web-based meeting	Monthly

1.4 Creating a Data Inventory

Goal: To identify and describe existing data and data systems

Having a Data Inventory helps the team catalogue what data is available, how to access it, and how it is being used.

DATA INVENTORY

Current Data Systems

1. Complete the table below to develop a list of the data systems in use in your district. For each system identify:

    a. **System Name:** Write the name of the system or software being described.
    b. **Type of Data:** Describe the types of data captured by the system (e.g., attendance, discipline, course grades).
    c. **Reporting Features:** Describe any reporting features the system has (e.g., ad hoc, one-click, predefined).
    d. **Users:** Describe who has access to the system (e.g., principals, secretaries, teachers).
    e. **Additional Notes:** Add any additional information about the system you would like to record.

The table below contains information about state data systems that may be available to users in your district. Please add additional rows as necessary to capture ALL data systems in use in your district.

System Name	Type of Data	Reporting Features	Users	Additional Notes
Student Information System	• Attendance • Demographics • Discipline • Grades • Graduation Rate • Programs • Schedules	• Pre-defined, User-defined, Ad-hoc	• Administrators	
Assessment data base				

Data Not Currently Collected

Are there any other types of data that you, or others who you have spoken with, would like to see collected and used to improve instruction? If so, list them and their potential use below.

Additional Data	What question(s) would they answer?	How might the team collect the data?	Who will be responsible for collection?

Discussion Prompts

As a team, consider these discussion questions related to various data sources.

Data Systems

1. Which is the team using to inform decision making? Are there any that are not used?
2. Which produce helpful reports or dashboards? Which do not produce helpful reports?
3. How might the systems be improved to support inquiry and data use?

Assessments

1. Which assessments are used to inform decisions about curriculum, instruction, and/or student placement? Which are not?
2. Looking across the currently administered assessments, are there assessments that provide essentially the same information about students? If so, is this additional information beneficial?
3. Are there assessments in place that provide longitudinal data that can track the growth of same student cohorts?
4. What assessments might be added to enhance the inquiry process or deleted to increase instructional time?

Additional Data Needed (Next Steps)

1. Which of the identified additional data are currently critical to support the inquiry process?
2. Who needs to be involved in the decision to collect these data?
3. Develop a plan that involves the critical stakeholders and will expedite the collection of these critical data elements.

Module 2 Protocols

2.1 Developing Focusing Questions to Initiate Inquiry

Goal: To identify and prioritize focusing questions to initiate the inquiry process.

Data Inquiry begins with a question. The more focused and specific the question, the more precise the inquiry will be. Think back to the team's vision. Are there goals associated with that vision? How is the team going to make that vision a reality? Use this protocol to develop and prioritize questions that will focus the collection and analysis of data related to team priorities.

DIRECTIONS

1. Begin by reviewing your vision, now answer the following questions:
    - What future are you striving for?
    - Identify what needs to happen in order to make that vision a reality.
        - The team might consider comparing the current reality and ideal future; what is the difference?
    - What goals can you set to get closer to the team's vision?
        - Having trouble identifying goals for the vision?
2. After reviewing the prompts above, prioritize. Use a voting system to identify the top one to three goals.
3. Choose one goal at a time and brainstorm some guiding questions. The questions do not have to be complex. Consider the goal itself as a question. A goal's purpose is to get the team closer to the vision, the ideal future. In this case the question might be, "Will accomplishing this goal help us get closer to the vision?" A following question might be, "What can or should the team do to achieve this goal?"
4. Record all the questions that the team identified, then prioritize through voting the top one to three questions.
5. Once the team has narrowed the questions to three or less, brainstorm what information would help answer those questions.
    - Information is data. This task is about identifying how to plan to answer the questions. With what data? Collected by whom? When? And how?
    - Consider creating or using an existing data inventory that identifies available data sources.
    - Use the table below or craft your own to record findings.

Goal – what is your focus goal?	Question – what is your priority question?	Data – what information/ data will answer your question?

2.2 Reviewing the Data

Goal: To make factual observations about what the data say regarding the question being investigated and to form inferences based on these observations

The data team will conduct an analysis of its data set and draw tentative conclusions about what the data say.

DIRECTIONS

Part 1: Preparing for Analysis

1. Appoint a notetaker(s) for this protocol.
2. Gather the data set(s) and data displays that relate to the question under investigation and make them available to all team members.

Part 2: Predictions/Assumptions

During the predictions/assumptions step, engage all participants in sharing their predictions or expectations of the data. This activity engages everyone to share their voice and perspective. It also allows the team to explore what they know or think they know already. The assumptions are critical to engage with as they can lead to conversations about root cause and/or surface some bias that informs behaviors and beliefs. This can be a powerful activity for exploring implicit bias, racial justice, and equity; so be prepared to facilitate and lean into any discomfort.

1. First, describe the data they are about to see without revealing the data. What does the data display show? Provide clear and concise detail.
2. Ask each participant to individually reflect and write down what they predict the data display will show.
3. After each participant has identified some predictions, ask them to provide a short explanation. Why is this outcome predicted? What underlying assumptions or rationale led to this prediction?
    - Facilitator's tip: Bruce Wellman and Laura Lipton (2004)[3] write, "team members often feel the need to build consensus around their predictions and assumption. This inclination results in time-consuming attempt to influence others …" (p. 53). Consider naming assumptions and saving the dialogue for after the data are revealed. This allows the data to test assumptions.

Part 3: Making Observations

1. During the observation step, concentrate on making objective observations about what is in the data. Do not attempt to make judgments about *why* the data may appear as they do.
2. Using the data set(s) and display(s) provided, take turns making factual observations about what the data say. The notetaker will record the observations under the question on the chart paper.
3. When expressing observations, consider using sentence starters such as: "I see …," "I observe …," and "I notice …" Stay away from making inferences. Discuss only the facts at this stage of the process. If you catch yourself using the terms "however," "because," or "therefore," stop and return to the sentence

[3] Wellman, B., & Lipton, L. (2004). *Data-driven dialogue: A facilitator's guide to collaborative Inquiry*. Arlington, MA: Miravia.

starters suggested above. It is okay to make observations that are based on the observations made by other team members. The following questions will help you probe for deeper analysis:

- How do the data sets compare to each other?
- What are the commonalities among a given data set?
- What patterns or similarities are evident across different data sets?
- What inconsistencies or discrepancies (if any) are evident?
- Is there anything expected but not seen?
- What is not represented in the data?
- What questions do the data raise?
- How do the data compare with the team's predictions and assumptions?
  - Note that accurate predictions do not make for accurate assumptions. Assumptions have to do with beliefs and mindsets and take time to unpack.

4. The notetaker will record observations under the question on the chart paper. Team members should record the observations on the *Data Analysis Template*.

Part 4: Making Inferences

1. The team will carefully work to make meaning from the data and the observations. Remember that inferences need to be based on the evidence observed in the data.

2. When all observations have been made, review them as a team. Code or group the observations into categories of findings. Think about the following questions while organizing the observations.

   - What assumptions might be underneath what you are noticing in the data?
   - What clues help explain why a certain population is meeting or missing targets?
   - What areas in the data stand out as needing further explanation? Why?
   - What patterns or themes do you see in the observations?
   - Which of these observations are most relevant and important to your inquiry? Why?

3. As a team, review the categorized findings. Make a list of what the team can now infer about the focusing question. The notetaker should record the list on chart paper. When the list is complete, record what the team can infer on the *Data Analysis Template*. The inferences made by the team will help clearly identify the direction for further inquiry.

Step 5: Asking Clarifying Questions or Drawing Tentative Conclusions

1. More often than not, the team will end this protocol with a new set of questions to investigate. The data needed to extend the inquiry may be readily accessible or the set of questions may require a new round of data collection and organization.

2. The inferences that the team has generated are likely to raise more questions that need to be answered to support the inferences before a tentative conclusion can be made. If that is the case, start the inquiry over with a new set of questions.

   - Brainstorm questions that arise from the observations and inferences the team has made about the initial data set. Record these questions on chart paper.

   - From this group of questions, identify the questions that must be answered before any tentative conclusions about the problem that underlies the priority issue can be made. Record

them on a new sheet of chart paper, leaving room next to each question to record more information. Also record the questions on the *Data Analysis Template*.

- The clarifying questions the team has identified may be answered using the data already collected and displayed. It is more likely; however, that new data will need to be identified, collected, displayed, and analyzed. For each of the clarifying questions, brainstorm the data needed and record the data element(s) next to each question on the chart paper.
- Build data displays as appropriate to facilitate analysis of the newly acquired data.

3. The data analysis process is iterative. Repeat the steps of this protocol to analyze the newly collected data.
4. Repeat the data analysis process until the team is confident that it can draw a tentative conclusion from its observations and inferences.

DATA ANALYSIS TEMPLATE

Question	
Predictions/Assumptions Observations	**Observations**
Inferences (What can the team now infer about the focusing question?)	
Clarifying Questions or Tentative Conclusions	**Data that would answer the clarifying questions**

DATA ANALYSIS BRAINSTORMING PROTOCOL

Purpose	To make factual observations, inferences, and generate clarifying questions related to the issue being investigated.
Analyzing the Data	1. Form groups of 3–5 members. Select a notetaker to record group work on chart paper. 2. Write the question being investigated on a sheet of chart paper and on your individual *Data Analysis Worksheet*. 3. Review the data displays provided by your data team. 4. Brainstorm factual observation about the data presented in the display. Pay particular attention to what the data say about relationships and trends. Record them on the chart paper. 5. As a group, reach consensus on what the data say. Record these observations on your *Data Analysis Template*. 6. Brainstorm inferences or hypotheses that may explain what you observed in the data. Record them on chart paper. 7. As a group, reach consensus on what may be significant explanations. Record them on your *Data Analysis Template*.
Extending the Inquiry	1. Given the explanations that the group posed, are there questions that need to be answered to support or test the explanations? 2. Brainstorm these questions and record them on chart paper. 3. Reach consensus on the questions that need to be answered to extend the inquiry. Record them on your *Data Analysis Template*. 4. What data need to be collected and analyzed to answer these questions? Record them on the chart next to each question and on your *Data Analysis Template*.
Reporting Out	1. As a group, identify the most important observation, the inference from this observation, and any clarifying questions that flow from the inference or explanation of the observation. 2. Share this information with the group as a whole. 3. Provide the data team with a copy of your *Data Analysis Template* so that the team can prepare the next data overview meeting where the inquiry will be extended.
Time	About 1 hour

2.3 Writing Problem Statements

Goal: To gain a deeper understanding of the problem and its impact, setting the foundation for root cause analysis

The data team will gain a deeper understanding of the problem and its impact through its completion of the *Problem Statement Template*.

DIRECTIONS

Part 1: Drafting a Problem Statement

1. Using the Problem Statement Template, state the original goal being investigated in the first box. Then, work through the boxes from top to bottom to develop the final statement by identifying:
    - The focusing question
    - The people affected
    - What the data say about the focusing question
    - The inferences generated from what the data say
2. Draft a problem statement.

Part 2: Generating Questions

1. Once the problem statement has been drafted, it may be obvious that other questions need to be answered, additional data collected, and further analysis conducted to frame the problem.
2. Brainstorm questions that arise from the draft problem statement that the team has formulated. Record these questions on chart paper.
3. From this group of questions, identify the questions that must be answered before a final problem statement can be created. Record them on a new sheet of chart paper, leaving room next to each question to record the data needed to answer each question.
4. The clarifying questions the team has identified may be answered using the data already collected and displayed. It is more likely; however, that new data will need to be identified, collected, displayed, and analyzed. For each of the clarifying questions that the team has identified as critical to the investigation, brainstorm additional data elements that need to be collected and record them next to each clarifying question on the chart paper.
5. Once the data have been collected and displayed, analyze the data.
6. Adjust the final problem statement, if necessary, after you complete the analysis.

PROBLEM STATEMENT TEMPLATE

Goal	
Focusing question	
Who is affected by this issue?	
What do the data say about the focusing question?	
What are the inferences regarding this issue?	
Draft problem statement	

2.4 Pursuing Root Cause and Problems of Practice

Goal: *To identify root causes and problems of practice to inform action*

A root cause is not easily or quickly found. This section is multi-layered and supports identifying root causes that produce the systemic outcomes we see in the data, exploring problems of practice that contribute to causal factors, and prioritizing potential root causes to inform action planning.

DIRECTIONS

Part 1: Reviewing an Example and Preparing the Display

1. Review the example of a *Fishbone Diagram Template* provided so that each team member understands the desired outcome.
2. Create a blank copy of the diagram on chart paper or use the template provided.
3. Write the problem under investigation in the box at the "head" of the fish on the *blank Fishbone Diagram*.

Part 2: Identifying Plausible Causes

1. Each member of the team will then write one or more responses to the question, "Why might this be happening?" Each response should be written on a separate sticky note then placed around the chart.
2. Identify major themes or categories that emerge or are logically associated with the problem and use these themes to fill in the boxes in the diagram. The diagram has four "ribs" and boxes, but more or fewer boxes can be used depending upon the selected categories. The following categories are often used: students, families, processes, curriculum, instruction, teachers. Remember to look for causes that are related to your practices or things that you control.
    - When a cause is identified or shared that is not within your control, consider re-wording it to reflect something you do have control over. For example, high amounts of absenteeism in students can be changed to school's supports for reducing absenteeism have not reduced absenteeism.
3. For each category, brainstorm possible causes of the problem related to that category by responding to the prompt, "Why might this be happening?" With each new cause discovered, follow-up with same prompt, "Why?" There is really no limit to this repetition of asking why but consider going at least three layers deep or asking why three times. The purpose is to find the source or root cause that influences the causal category. Record the possible causes next to the causal category boxes as a "rib" in the diagram. Repeat this process for each of the categories.

Note: During the brainstorming section of this protocol, participants may come up with possible causes that do not fit easily into one of the previously identified categories. This can indicate a need to identify a new category or broaden an existing category. Do not discard an idea solely because it does not fit into a previously identified category. If necessary, add the new category and move on. The purpose of the major categories is to provide a structure to guide the brainstorming. These categories should be used to inspire rather than restrict participants' thinking.

Part 3: Examining the Display

As a data team, analyze each possible cause to determine whether it is a likely cause by asking:

- Would the problem have occurred if this cause had not been present?
- Would the problem reoccur if the cause was corrected?

1. If the answer to both these questions is no, you have found a likely cause.
2. Place a checkmark next to each idea that is **not** a likely cause and circle each idea that is a likely cause of the problem.

Part 4: Determining Significance and Control

1. Study the display that you have created. Are all the reasons that have been identified under the control of the district? If not, place an "X" next to those not under district control.
2. Create a Significance/Control Matrix on a piece of chart paper similar to the example provided in Figure 3, *Significance and Control Matrix Template*.
3. Place each possible cause in a quadrant of the matrix based on the team's judgment about its significance as a cause of the underlying problem.
4. When all the possible causes have been placed in a quadrant of the matrix, revisit them, starting with Quadrant I (high significance). As a team, discuss the degree of control that the district or school has over each of the causes in Quadrant I.
5. Reposition each of the Quadrant I possible causes along the degree of control axis to indicate the control that the district or school has over that cause.
6. Repeat this process for the possible causes in each of the quadrants of the matrix.
7. When all the possible causes have been positioned on the significance and control axes, those in Quadrant I represent the causes that are most significant and over which the district or school has the most control. These are the causes that should be easiest to address and which, if appropriately addressed, will have the greatest impact on student outcomes.

Part 5: Test the Root Cause

1. In support of action planning, spend some time brainstorming, how do we know if we identified the right root cause to address? Data inquiry is about continuous learning and now our question is, do we have the right root cause? Specifically, identify what data would allow us to test the root cause.
2. Use Figure 4, *Data to Test the Identifying Cause Data Template*, to record data elements, how they are to be collected, how the data will be produced, and who will produce it.

FIGURE 1. FISHBONE DIAGRAM TEMPLATE EXAMPLE

District/School Processes		**Students**		
Retention in the primary and intermediate grades At-risk students are not identified in elementary school	No targeted counseling for students who have been retained	Overage for grade Lack of engagement with school	Member of a special population Frustrated with lack of academic success	**Problem:** **Carter Tech has a large percentage of students who leave school before entering high school.**
Instruction is not differentiated to meet needs of diverse student body	No real-world context No focus on relevant outcomes	No career education in grades 7 and 8 that supports the need for high school completion	Focus on state standards No focus on relevant outcomes	
Instruction		**Curriculum**		

FIGURE 2. FISHBONE DIAGRAM TEMPLATE

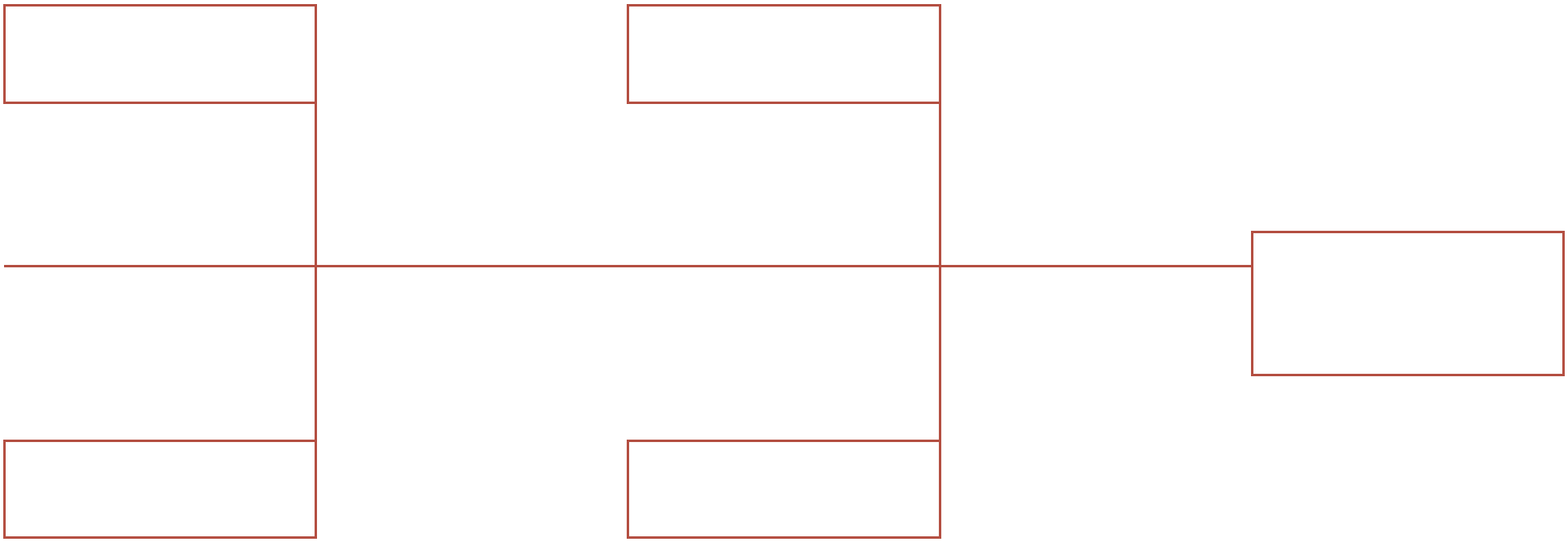


FIGURE 3. SIGNIFICANCE AND CONTROL MATRIX TEMPLATE

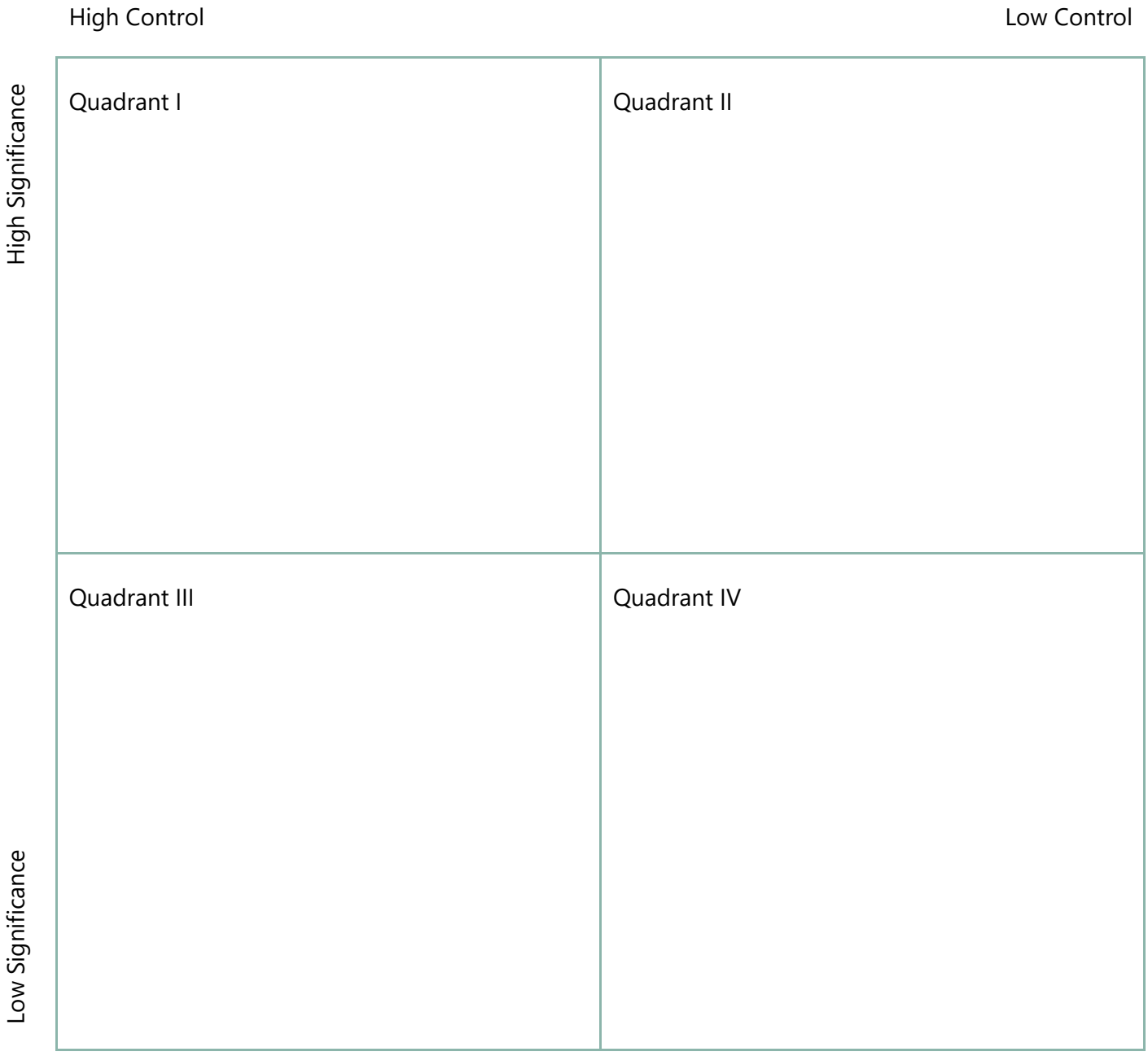


FIGURE 4. DATA TO TEST THE IDENTIFYING CAUSE DATA TEMPLATE

Issue that started the inquiry

Evidence-based problem

Cause to be tested

Data elements needed	Target date for collection	Display construction plan	Person/group responsible

LEGAL NOTICE

This resource was abridged and adapted from original materials in the following document:

Geier, R., Smith, S., (2012). *District and school data team toolkit*. Everett, WA: Washington Office of Superintendent of Public Instruction, Washington School Information Processing Cooperative, and Public Consulting Group.

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