EQUITY DATA REVIEW PROTOCOL TOOLKIT

Prepared for [District]

HANOVER RESEARCH

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INTRODUCTION

Data collection and review are key responsibilities that support a range of school and district priorities, including classroom instruction, community-wide communication, and ongoing improvements. Data collection and analysis enable school and district leaders to examine needs and impact short and long-term student success.[1] Through comprehensive data review and discussion, leaders and administrators can act to create positive change at the individual and system-wide levels, which may include:[2]

- Identifying individual student needs and placing students in groups, interventions, programs, and classrooms;
- Modifying curriculum and instruction;
- Motivating students and educators;
- Coaching and supervising teachers and other school personnel;
- Adopting and evaluating programs and management decisions; and
- Communicating information to outside audiences.

Furthermore, carefully reviewing student data may promote equity and foster equitable school and district practices. Reviewing data by student group or outcome demonstrates importance when analyzing the presence or possibility of disproportionalities because these data clarify differences and allow for direct comparisons.[3] To review student data with fidelity and promote equity, school and district leaders must follow a data review protocol, which provides a systematic approach to understanding, analyzing, using, and evaluating a set of data and subsequent actions.[4]

[District] continues to explore student academic performance data for different student groups to support equitable practices. Therefore, this report aims to guide [District] in using a data review protocol and understanding data as insights into how to create a more equitable school system. Specifically, this **Equity Data Review Protocol Toolkit** presents best practices and resources to support [District] in implementing a data review protocol through an equity lens.

The following table presents general and equity-focused data review protocol resources that guide this toolkit. Resources present similar protocols but with slight variations, which Hanover synthesizes in the following sections.

Data Review Protocol Resources

GENERAL DATA REVIEW PROTOCOL	EQUITY DATA REVIEW PROTOCOL
▪ **District Data Team Toolkit** ▪ **District and School Data Team Toolkit**	▪ **Exploring Equity Issues: Educators Use Data and Find Solutions to Improve Equity** ▪ **School discipline data indicators: A guide for districts and schools** ▪ **Outcomes & Equity Assessment** ▪ **Systemic Equity Review Framework: A Practical Approach to Achieving High Educational Outcomes for All Students**

Source: Items within the figure link to sources.

OVERVIEW

This toolkit:

- ✓ Explores components of data review protocols and best practices for analyzing student and district data through an equity lens; and

- ✓ Presents tools and ready-to-use resources that data teams can incorporate into their data review process immediately.

AUDIENCE

This toolkit presents [Client District's] district and school site leaders with best practices and data review protocol guidance. It contains insights and ready-to-use tools that data teams and key stakeholders can use when establishing data review teams and an equity analysis process. Additionally, [District] leaders can draw on this resource when reviewing other district improvement areas and challenges, as data review protocols appear to follow similar structures.

FORM A DATA TEAM

Understand Data Team Roles and Responsibilities

Beginning the data review process requires substantial planning and preparation; therefore, districts should start by forming a data team. The Massachusetts Department of Elementary and Secondary Education (DESE), which provides a **comprehensive guide** for establishing and operating data teams, defines a district data team as:[5]

> "a group of educators collaboratively using data to identify and understand opportunities for improvement, then working together to make changes that get measurable results. Using protocols for collaborative inquiry, the group follows a process in which members prepare, implement, and reflect on data-informed actionable goals."

Specifically, a data team holds responsibility for the five functions contained in the following figure.

Data Team Functions and Responsibilities

FUNCTIONS	RESPONSIBILITIES
Vision and Policy Management	▪ Creates and articulates the vision for data use ▪ Sets and models expectations ▪ Implements and upholds policies for data use in the district
Data Management	▪ Identifies data to be collected ▪ Manages data infrastructure and access ▪ Designs meaningful data displays
Inquiry, Analysis, and Action	▪ Selects or develops models for inquiry and data use that will be used district-wide ▪ Models the inquiry process publicly
Professional Development	▪ Provides training and professional development to support district departments, principals, school data teams, and teachers in their use of data ▪ Uses data to identify professional development needs
Monitoring and Communication	▪ Monitors the progress of the district toward achieving its vision for data use ▪ Establishes the lines of communication necessary for the sharing of results and best practices ▪ Communicates with stakeholders to determine their specific needs for data and training

Source: Washington Office of Superintendent of Public Instruction, Washington School Information Processing Cooperative, and Public Consulting Group[6]

Understanding what schools and the district want to achieve from reviewing data, as well as the responsibilities of a data team, enables district leaders to select individuals to serve as team members. The following guiding questions may support leaders in choosing stakeholders to participate in the data review process:[7]

- What are the perspectives and expertise needed to fulfill the data team's vision and priority functions?

- Who is familiar with and/or supportive of using inquiry and data to inform decisions?
- Who has solid skills in analyzing and explaining data?
- Who has credibility with stakeholders and can champion inquiry and data use with others?
- Whose participation would help the data team address current barriers to effective data use? (Note that this could lead the data team to include individuals who might be hesitant or resistant to processes of inquiry and data use, not just those who are already on board.)

The data team should include two key members—an experienced data user and a data manager—in addition to district staff working in various departments (e.g., elementary education, secondary education, general and special education, curriculum and assessment). The following figure describes the roles of the experienced data user and the data manager.

Key Data Team Members

MEMBER	RESPONSIBILITIES
Experienced Data User	Ensures that the work of the team is: ▪ Supported by the resources necessary to function effectively ▪ Visible to others in the district ▪ Acted upon ▪ Connected to other improvement initiatives
Data Manager	Maintains authority over: ▪ Establishing systems to ensure the cleanliness and quality of the data ▪ Integrating different data systems ▪ Ensuring all users are using the same data dictionary and terminology

Source: Washington Office of Superintendent of Public Instruction, Washington School Information Processing Cooperative, and Public Consulting Group[8]

Prioritize Diversity in Skills and Identities

When forming a data team to review student outcomes through an equity lens, districts must include a diverse group of voices that will listen to stakeholders and work collaboratively.[9] The following guiding questions may support districts with reflecting on how their data team functions in relations to improving equity:[10]

- Whose voices and perspectives are important to include?
- How do my own identity and my role within the systems of our society affect the way I approach the work, and what impact will my identity have on both the persons with whom I collaborate and the school community we are establishing?
- How can we launch an approach to professional learning that builds on our individual assets, needs, and interests while also serving the goals of the project and the collective needs of our group?
- How are we partnering with students, families, and the wider community to engage them in the work? Are we ensuring that we have a diverse and representative array of voices authentically included?

Districts may consider the characteristics and attributes presented in the following figure to ensure that the data team includes a range of identities and skills.[11] These attributes stem from a list for school redesign teams that uses an equity lens and may support equity-focused data teams as well.

Key Attributes for Teams

SKILL SETS/ASSETS	ROLES	IDENTITIES/BACKGROUNDS	ADDITIONAL RESPONSIBILITIES
▪ Creative thinking ▪ Organized planning ▪ Relational skills ▪ Facilitating ▪ Leadership potential ▪ Community organizing	▪ Teacher/staff (e.g., special educator, English language learner teacher, guidance counselor) ▪ School administrator ▪ Parent/family member ▪ Student ▪ Organizational partner ▪ District representative	▪ Race, ethnicity, language, etc. reflective of the community ▪ Gender diversity ▪ Geographic diversity ▪ Age diversity	▪ Union representative ▪ School board member ▪ Key consultant ▪ Bilingual skills ▪ Representative from a previously established organizational partnership ▪ Municipal or state representative

Source: Center for Collaborative Education[12]

Once a district forms its team and prepares to begin gathering and reviewing data, the team may participate in self-assessment activities to determine the group's readiness for working with school data.[13] Open and closed-ended reflection and assessment activities appear on the following pages.

Data Use and Collaboration Anticipation Guide

Directions: Before engaging in school and district data, data teams should assess their readiness for working with data by using this guide, as understanding one's readiness can help participants know where to focus their attention.

To use this guide, read each of the numbered items presented below. Then, circle the appropriate answer choice indicating whether you agree or disagree with the statement given your current knowledge of and exposure to student data.

----

1. I understand how a typical student performs in the grade or subject I teach.	**Agree**	**Disagree**
2. I can recognize variations in student performance based on assessment and achievement data.	**Agree**	**Disagree**
3. I am confident in my ability to use student data to differentiate instruction and offer additional supports.	**Agree**	**Disagree**
4. I am comfortable talking about data with my peers, students, and administrators.	**Agree**	**Disagree**
5. I can use data to determine the growth that students have made over time.	**Agree**	**Disagree**
6. I can distinguish between different forms of data (e.g., growth data, level of mastery, percentage score).	**Agree**	**Disagree**
7. I can use student data to identify issues that they are currently experiencing in their learning.	**Agree**	**Disagree**
8. I can use data to diagnose potential causes for student performance issues.	**Agree**	**Disagree**
9. I collaborate with my colleagues to implement actions that support student achievement based on data.	**Agree**	**Disagree**
10. I know how to use data that will be obtained in the future to determine if instructional changes were effective.	**Agree**	**Disagree**
11. I know where to locate data on my students' academic achievement, attendance, and behavior.	**Agree**	**Disagree**

12. I use data on a regular basis to inform my instructional planning.	**Agree**	**Disagree**
13. I know how to evaluate data to assess student performance by subgroup (e.g., students with disabilities).	**Agree**	**Disagree**
14. Data literacy is an important skill for all teachers to have to maximize student achievement.	**Agree**	**Disagree**
15. I use collaborative meeting time to discuss student performance and growth data with my peers.	**Agree**	**Disagree**

Source: Wayne County Regional Educational Service Agency, Washington Office of Superintendent of Public Instruction, Washington School Information Processing Cooperative, and Public Consulting Group [14]

Team Readiness Tool

<u>Directions</u>: Read each of the questions presented below. Then, answer each question to reflect on data and information sources, resources, and readiness. This identification helps make data collection happen and determines the technical assistance needed to engage in this process. Team leaders should complete this activity, along with team members, as appropriate.

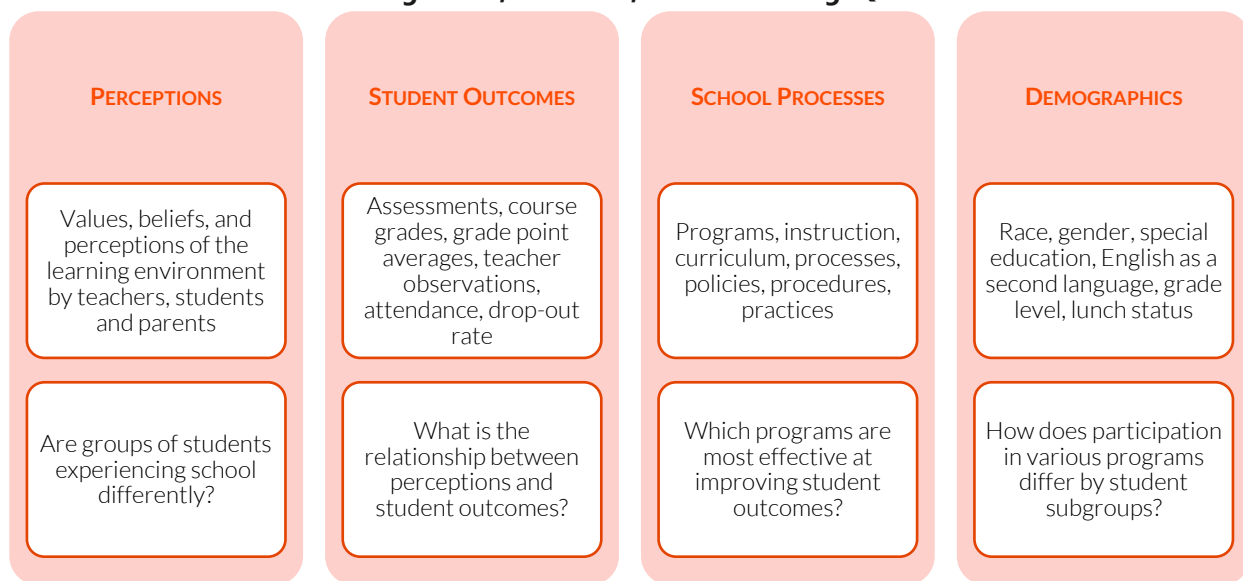| |
|---|
| **In what ways do faculty and staff use data to help guide their decisions?** |
| **What level of access does the team have to enrollment data by student characteristics (e.g., race, gender)?** |
| **Who has access to the person or office that prepares data for your school or district? Is this person part of your team? If not, can they assist your team?** |
| **Who has access to secondary district data (is there a person on the team who can enter/extract secondary data)?** |
| **What other data are available?** |
| **What are the barriers associated with the collection of data?** |

Source: Office of Community College Research and Leadership, University of Illinois at Urbana-Champaign [15]

GATHER STUDENT DATA

Identify Data

The data team must review multiple data from across the district to understand the current trends and outcomes of K-12 education fully. By examining all student and district information, and communicating that the team is doing so, the team may increase the credibility and rationale of their findings.[16] Districts may categorize data for school improvement into four areas: perceptions, student outcomes, school processes, and demographics. Considering these four areas, rather than solely student outcomes, provides additional perspectives on district operations and areas for improvement. The following figure presents these areas with additional details and associated guiding questions.

Data Categories, Details, and Guiding Questions

PERCEPTIONS	STUDENT OUTCOMES	SCHOOL PROCESSES	DEMOGRAPHICS
Values, beliefs, and perceptions of the learning environment by teachers, students and parents	Assessments, course grades, grade point averages, teacher observations, attendance, drop-out rate	Programs, instruction, curriculum, processes, policies, procedures, practices	Race, gender, special education, English as a second language, grade level, lunch status
Are groups of students experiencing school differently?	What is the relationship between perceptions and student outcomes?	Which programs are most effective at improving student outcomes?	How does participation in various programs differ by student subgroups?

Source: Massachusetts Department of Elementary and Secondary Education[17]

Alternatively, the Education Development Center (EDC) frames its equity review process around four main equity indicators: achievement status, educational opportunities, social-emotional support, and climate and culture.[18] The following figure presents questions based on the four indicators for data teams to ask when identifying and reviewing data through an equity lens.

Guiding Questions on Key Equity Indicators

ACHIEVEMENT STATUS
- How are students performing?
- How have achievement rates for subgroups changed over time?
- What teacher and staff qualities are related to student achievement across subgroups?

EDUCATIONAL OPPORTUNITIES
- What types of in-school and afterschool opportunities are offered, and which students participate in them?
- What are the teaching and learning conditions?

SOCIAL-EMOTIONAL SUPPORTS
- How is school discipline implemented?
- What social-emotional supports exist for students and who has access to them?
- What policies and practices are in place to address historical and social inequities?

CLIMATE AND CULTURE
- What is the culture of the school and district?
- What practices are in place to support engagement among multiple stakeholders (students, teachers, administrators, families, community members)?

Source: Education Development Center[19]

Using guiding questions and available resources, data teams may then determine what information is accessible. The following figure presents ways in which taking stock of available datasets may benefit districts.

Benefits of Conducting a Data Inventory

Gain a clearer picture of the data currently available to guide inquiry at all levels in the district, and how the district uses them	Identify data that are collected, but that not necessarily well-used	Identify redundancies in data collection that the district could eliminate	Identify additional data elements needed to address district and school improvement and inquiry processes	Communicate expectations for what to do with particular data

Source: Massachusetts Department of Elementary and Secondary Education[20]

Additionally, the following figure contains common assessment and non-assessment data available at a district level that teams may use to analyze district operations and student outcomes.

Common District-Wide Data Sources

ASSESSMENT DATA	NON-ASSESSMENT DATA
▪ Statewide tests ▪ Commercial benchmark assessments or screening tools that the district uses with all students in a particular population ▪ Locally developed assessments such as common mid-terms and finals created by district personnel	▪ District financial statements ▪ Human resources tracking systems ▪ Student transportation information

Source: Massachusetts Department of Elementary and Secondary Education[21]

Furthermore, to support data teams with identifying data collected at different schools, grade levels, or groups, team members can organize these data elements in the Student Outcome Data Inventory tool at the end of this section.

Collect Data

As shown in the preceding subsection, data teams may review a variety of datasets and sources; therefore, the methods used for gathering information may also vary. These methods may collect quantitative data (e.g., located in learning management systems) and qualitative data (e.g., collected through surveys).[22] When collecting data through an equity lens, the EDC provides further information, contained in the following figure, on data collection methods and procedures.

Data Collection Methods Targeting Equity

DATA SOURCES	DESCRIPTIONS
District Data Systems	▪ Districts use data management systems for accountable and other purposes. School and district-level data include a range of information that can be analyzed by subgroups, including student achievement, demographics, and per-pupil spending. District data also include teacher evaluation and curriculum management systems. ▪ **An equity review relies heavily on these information systems.**
District Surveys	▪ Schools and districts conduct their own surveys, such as school culture and climate surveys, youth health and risk behavior surveys, and staff and parent surveys, which are typically implemented annually or biannually. ▪ **An equity review can use results from the district surveys, and if possible, may request to add relevant questions based on the four equity indicators (i.e., achievement status, educational opportunities, social-emotional supports, culture and climate).**
Student Focus Groups	▪ Leaders may conduct focus groups at schools with groups of students to gather data on each of the four equity indicators. Focus groups are a preferred method for gather data about student beliefs and perceptions because they provide safe spaces among peers where students feel comfortable speaking freely, and they allow for deeper discussions on a topic and consensus on issues and root causes. ▪ **To ensure a representative sample, selection criteria are subjected to randomization methods within subgroups.**
Surveys	▪ To supplement district surveys, leaders may judiciously administer teacher, administrator, and student surveys to assess the four equity indicators. ▪ To reduce the load on participants, leaders may administer surveys in conjunction with or added onto other formative assessments, such as student classroom exit surveys, teacher professional learning community (PLC) exit surveys, and administrator meeting surveys.
Key Informant Interviews	▪ Key informant interviews allow for the in-depth gathering of knowledge from those who know the most within the school community. Leaders identify key informants through reliable sources (e.g., principals, teacher leaders, parents) and are asked as part of the interview protocol to identify other key informants. ▪ **These interviews provide a way to corroborate evidence gathered through other methods and to go into depth on the root causes of identified inequities.**
Classroom Observations	▪ Classroom observations allow the systematic search for root causes of inequities identified through other methods. For example, if an analysis of achievement data by classroom indicates that a subset of teachers has students with greater achievement gaps than other teachers, systematic observations of classrooms where challenges exist compared with observations of classrooms where challenges are smaller may reveal instructional practices that help to reduce the achievement gap.

DATA SOURCES	DESCRIPTIONS
Educational Ethnography	▪ Educational ethnography is a human-centered examination of education policies and practices. It is an emerging approach that sees policy as a form of sociocultural practice, a system of social relationships, beliefs, narratives, motivations, norms, and understandings. ▪ Traditional research assumes a linear relationship between policy and practice, but a human-centered lens can reveal the role and perceptions of staff, key decision-makers, and other actors in the system. ▪ **Building on ethnographic techniques, leaders conduct observations in various settings (e.g., department and PLC meetings, professional development activities, central office meetings) and examine the interaction of diverse individuals and groups in the educational system, thereby providing a holistic understanding of the intersection of equity policies and practices.**

Source: Education Development Center[23]

Aside from the method that data teams use to collect—or request to collect—data, the collection process must occur efficiently and effectively, and results must provide "complete, accurate, and timely" information in a clear and organized way.[24]

Student Outcome Data Inventory

Directions: List the data elements related to student outcomes that the district currently collects for only some students at the same grade-level district-wide. For example, some schools may implement commercial assessments that others do not. For each student outcome data element, provide the indicated information in the columns to the right. (Not all columns may apply to all elements).[25]

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DATA ELEMENT	SCHOOL	GRADE LEVEL(S)	CONTENT AREAS	DATE ADMINISTERED	LOCATION/OWNER OF DATA	DATE DATA AVAILABLE	ACCESS (1-4)	CURRENT DATA USE

Source: Massachusetts Department of Elementary and Secondary Education[26]

DISCUSS CURRENT GOALS, METRICS, AND DATA

Assess Goals and Key Performance Indicators

Critical discussion and examination of district and school leaders' influence over certain district- or school-wide components allows the data team to frame analysis, and further data collection and action. Structuring questions around the four data categories or equity indicators from the previous section can help structure questioning and align action with current operations.[27] Aligning data questions with existing goals and key performance indicators (KPIs) may support the data team in the following ways:[28]

- Help the data team coordinate efforts with other existing teams;
- Help the data team identify data that might be available to inform the inquiry process; and
- Help the data team avoid redundancy when it gets to the point of developing strategies and action steps.

To consider questions and review data through an equity lens, the data team may consider equity-focused goals when analyzing datasets and data overviews. Equity goals, such as those formed by the International Development Research Association (IRDA), aim to support districts and communities with building systems to foster equity. The following figure presents IRDA's Six Goals of Educational Equity.

Six Goals of Educational Equity

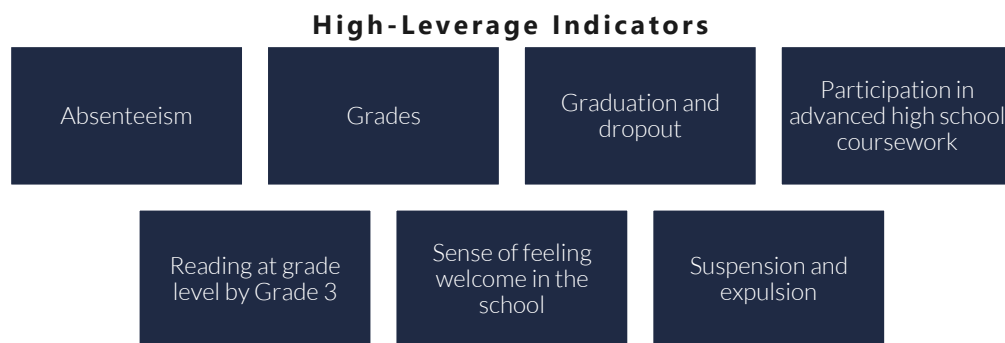| GOAL	DESCRIPTION
Comparably high academic achievement and other student outcomes	As data on academic achievement and other student outcomes are disaggregated and analyzed, one sees high comparable performance for all identifiable groups of learners, and achievement and performance gaps are virtually non-existent.
Equitable access and inclusion	Schools ensure unobstructed entrance into, involvement of, and full participation of learners in schools, programs, and activities.
Equitable treatment	Patterns of interaction between individuals and within an environment should be accepting, valuing, respectful, supportive, safe, and secure such that students feel challenged to be invested in the pursuits of learning and excellence without fear of threat, humiliation, danger or disregard.
Equitable opportunity to learn	At a minimum, learning opportunities should ensure that every child, regardless of characteristics and identified needs, is presented with the challenge to reach high standards and receives the requisite pedagogical, social, emotional and psychological supports to achieve the high standards of excellence that are established.
Equitable resources	Resources—including money, time, qualified staff, appropriate facilities, materials, instructional hardware and software, and academic and other supports—must be distributed in ways to ensure that all students achieve high academic standards.

GOAL	DESCRIPTION
Accountability	All education stakeholders should accept responsibility and hold themselves and each other responsible for every learner having full access to quality education, qualified teachers, challenging curriculum, full opportunity to learn, and appropriate, sufficient support for learning so they can achieve at excellent levels in academic and other student outcomes.

Source: International Development Research Association[29]

Additionally, the IDRA presents a self-assessment tool that guides schools and districts through an evaluation of their equity efforts. This tool, available **here**, asks a set of questions for each goal, and leaders rank their school or district's efforts on a scale of one (i.e., no effort) to four (i.e., extensive effort).[30]

When narrowing data to a set of KPIs, districts should focus on "**high-leverage indicators**," which include metrics that predict relevant outcomes and that schools can impact. The following figure presents examples of high-leverage indicators that may impact equity.

High-Leverage Indicators

Absenteeism	Grades	Graduation and dropout	Participation in advanced high school coursework

Reading at grade level by Grade 3	Sense of feeling welcome in the school	Suspension and expulsion

Source: Education Northwest[31]

Spotlight: Portland Public Schools

Portland Public Schools (PPS) prioritizes racial equity and follows a five-year equity plan to narrow achievement gaps and eradicate disproportionality and racial predictability in the top and bottom performance groups.[32] The most recently completed five-year plan contains seven metrics to support district leaders with monitoring progress towards its equity goals, which include:[33]

- Overrepresentation of students of color who do not advance at least one tier in Grades K-3 reading;
- Overrepresentation of students of color in special education;
- Overrepresentation of students of color experiencing exclusionary discipline;
- Underrepresentation of students of color in talented and gifted (TAG);
- Underrepresentation of students of color in AP, IB, and dual credit courses;
- Underrepresentation of teachers of color compared to the student population; and
- Percent of contract dollars paid to minority-owned businesses.

PPS's first five-year Racial Equity Plan is available through the district website, **here**[34]. Since the plan concluded in 2016, PPS continues to prioritize racial equity and currently supports the Racial Equity and Social Justice Framework, detailed **here**.[35]

Display Data and Make Inquiries

Once the data team discusses key questions, goals, and indicators, members may shift to presenting data to certain stakeholders and looking for potential gaps or additional data needs.[36] The presentation itself should fulfill the following criteria:[37]

- Tell the whole story;
- Have complete, accurate, and timely data;
- Contain all relevant and pertinent data; and
- Be readable and understandable.

Data presentations, or displays, allow school leaders to obtain a variety of data in one place. The information presented "enables educators to focus on particular problems and, equally important, to monitor and address all the issues that affect performance."[38]

While discussing data displays, data teams can ensure that meetings maintain productivity and efficiency by using the **Data Overview Checklist** tool on page 19. This checklist contains an item about the meeting and brainstorming session resulting in "the identification of additional data needed and potential data sources."[39] Because original data collection may not provide all necessary data for reviewing and advancing student outcomes through an equity lens, data teams may need to obtain additional outcomes. Members may use the **Focus Questions Investigation Template** on pages 20 and 21 to identify additional data needs.

Data Overview Checklist

Directions: Use the following checklist when reviewing a data presentation to ensure that the presentation contains all important components.

FORMAT AND STRUCTURE	YES/NO
Does your Data Overview:	
▪ Identify the audience that will participate in the overview?	
▪ Have a purpose?	
▪ Have an agenda?	
▪ Contain data displays driven by a focus question?	
▪ Include a structured brainstorming session?	
▪ Identify next steps?	
▪ Will the format and structure of your data overview result in specific outcomes that will move inquiry forward?	
AGENDA	**YES/NO**
Does your Agenda:	
▪ State the purpose of the data overview session?	
▪ List the data displays to be reviewed?	
▪ List the steps in the brainstorming process?	
▪ Include identifying next steps?	
DATA DISPLAYS	**YES/NO**
Do the Data Displays:	
▪ Contain the attributes of a good chart?	
▪ Appear free of unnecessary detail and extraneous features?	
▪ Use the most appropriate chart style to display the data?	
▪ Tell the story that you want to convey about the data?	
BRAINSTORMING	**YES/NO**
Will the structure of the Brainstorming activity result in:	
▪ The identification of problems evident in the data?	
▪ The identified problems being listed in priority order?	
▪ The formulation of hypotheses to explain the problem?	
▪ Clarify questions to further direct the inquiry?	
▪ The identification of additional data needed and potential data sources?	
NEXT STEPS	**YES/NO**
Do the identified Next Steps:	
▪ Logically follow from the outcomes of the brainstorming session?	
▪ State the date and time of the next meeting?	
▪ Identify the audience and/or participants in the next meeting?	

Source: Massachusetts Department of Elementary and Secondary Education[40]

Focusing Question Investigation Template

<u>Directions</u>: Use this template as soon after the delivery of the data overview as possible to record the key clarifying questions and other ideas it generated. The data team may then share this template with stakeholder groups in the district as work proceeds around data collection.

Focusing Question
Hypothesized "Problem(s)" Discovered Through a Review of High-Level Data   1.   2.   3.   4.
Clarifying Questions Related to these "Problems"   1.   2.   3.   4.

<u>Identifying Data Elements Needed</u>: Begin by referencing notes from the data overview regarding the data needed to inform each of the clarifying questions in your inquiry. For each clarifying question, list the data elements needed to address the question. For each data element, list which domain of data the element represents and whether it is currently collected and accessible to the data team.

Clarifying Question #1:_____

DATA ELEMENTS NEEDED TO ADDRESS THE CLARIFYING QUESTION	DOMAIN (I.E., DEMOGRAPHICS, PERCEPTIONS, PROCESSES, OR STUDENT OUTCOMES)	EASE OF ACCESS* 1-4, OR N/A	PLAN TO ACQUIRE REQUIRED DATA ELEMENTS

*Access refers to the degree to which the data are available to data team members. Rate Access on a scale of 1–4 (1 = hard to access; 4 = easily accessible) or N/A if the needed data element is not currently collected.

Clarifying Question #2:_____

DATA ELEMENTS NEEDED TO ADDRESS THE CLARIFYING QUESTION	DOMAIN (I.E., DEMOGRAPHICS, PERCEPTIONS, PROCESSES, OR STUDENT OUTCOMES)	EASE OF ACCESS* 1-4, OR N/A	PLAN TO ACQUIRE REQUIRED DATA ELEMENTS

Clarifying Question #3:_____

DATA ELEMENTS NEEDED TO ADDRESS THE CLARIFYING QUESTION	DOMAIN (I.E., DEMOGRAPHICS, PERCEPTIONS, PROCESSES, OR STUDENT OUTCOMES)	EASE OF ACCESS* 1-4, OR N/A	PLAN TO ACQUIRE REQUIRED DATA ELEMENTS

Clarifying Question #4:_____

DATA ELEMENTS NEEDED TO ADDRESS THE CLARIFYING QUESTION	DOMAIN (I.E., DEMOGRAPHICS, PERCEPTIONS, PROCESSES, OR STUDENT OUTCOMES)	EASE OF ACCESS* 1-4, OR N/A	PLAN TO ACQUIRE REQUIRED DATA ELEMENTS

Source: Massachusetts Department of Elementary and Secondary Education[41]

ANALYZE DATA TO IDENTIFY ROOT CAUSES

Synthesize Information

After the data team discusses initial data, school and district goals, KPIs, and additional data needs, the team may combine relevant data from all sources and engage in deeper analyses. Discussion questions included during this deep analysis may include:[42]

- What patterns or inconsistencies are evident across the different data sets?
- Do different data sets reveal the same patterns and trends? If not, what can the data team learn from the differences? (e.g., does the same student score at comparable levels of proficiency on different assessment measures?)
- How have the data changed over time? (i.e., longitudinally)
- How do the data compare with data from other populations in the district?

As a general process for facilitating data review meetings, data teams can follow the **D.A.T.A. Protocol for Student Data Analysis** on page 24 and the associated **D.A.T.A. Protocol Implementation Checklist** on pages 25 and 26 to ensure that the review process occurs efficiently and effectively.

To guide the data team's analysis and discussion *during meetings*, members may follow a four-phase dialogue process developed by the Teacher Development Group and presented by the School Reform Initiative. This process guides participants through predictions, visual representations, data analysis, and conclusions. This four-phase process—the **Data-Driven Dialogue** tools on pages 27 through 30—supports data analysis and guides data teams towards identifying root causes.[43]

Discern Root Causes

Once the data team collects and reviews all data, members can engage in a root cause analysis (RCA) to look for reasons why a problem, such as inequity, continues. According to the American Society for Quality, an RCA is:[44]

> "a collective term that describes a wide range of approaches, tools, and techniques used to uncover causes of problems. Some RCA approaches are geared more toward identifying true root causes than others, some are more general problem-solving techniques, and others simply offer support for the core activity of root cause analysis."

Notably, RCAs in an education setting may prove difficult since participants often have strong opinions regarding school-based solutions. Therefore, the data team must spend time discussing all potential issues. Additionally, problems may not have one answer or an obvious answer, so data teams must consider multi-layered causes and all related factors.[45] The following figure presents RCA activities as well as page numbers to DESE's directions and templates for each activity.

Root Cause Analysis Activities

ACTIVITY	DESCRIPTION	DESE TEMPLATE
Why, Why, Why?	This protocol is a relatively quick and informal technique for identifying the root causes of problems. Individuals or groups of three to eight people can use this tool, and it requires little facilitation. This technique is especially useful to start a discussion and determine if there is disagreement among the participants. Groups should use a more formal process should for in-depth discussion.	Pages 222-223
20 Reasons	This protocol works well with a large or small group. It enables the group to brainstorm many issues related to a particular problem and then carefully consider whether they are actual causes or simply excuses.	Pages 224-226
Fishbone Analysis	This very formal protocol works well with groups of about three to five participants. The protocol provides the chance for the group to consider and discuss many possible explanations for a problem and enables participants to categorize causes.	Pages 228-230
Graphic Representation	This protocol enables a group to discuss, analyze, and display relationships among contributing factors. In essence, the group creates a visual representation of the problem or situation, including all influencing factors and possible solutions that have come to light during the analysis. This highly collaborative technique works best with groups of up to five people and requires a somewhat skilled facilitator.	Pages 232-234
Dimensions Bulls-Eye	This protocol, derived from the Department's Performance Improvement Mapping (PIM) process, is a lengthy but effective way to brainstorm possible root causes, sort them into one of three dimensions of district improvement, and prioritize key root causes for action. This process works best with a group of seven to 10 people and requires strong facilitation.	Pages 236-239

Source: Massachusetts Department of Elementary and Secondary Education[46]

Residents First HQO Initiative also provides a template for the Why, Why, Why?, also called the 5- Whys activity, which is available through the State of Michigan website and the following link:[47]

5-Whys Guide & Template

The third RCA activity above, the fishbone analysis, demonstrates effectiveness when equity represents one factor in why certain students demonstrate high or low outcomes. An example presented by the Minnesota Department of Education—reproduced on page 31 as the **English Language Learner Reading Root Cause Analysis**—presents an example of how districts may use the fishbone diagram to identify root causes and support equitable practices.

D.A.T.A. Protocol for Student Data Analysis

Directions: This document introduces the D.A.T.A. Protocol, a procedure that teachers or data teams can use during data review sessions, professional learning community (PLC) meetings, and by themselves to analyze student data more effectively.

D **DETERMINE** the focus of meetings. Will teachers be examining data for their whole school, a specific class, or individual students? This determination can be made before every meeting or can rotate based on an established schedule (e.g., every third meeting is devoted to whole school data).

A **ANALYZE** student data to identify growth trends, strengths, and gaps in performance based on the determined meeting focus. Identify if there are mastery differences between student groups or individual students. Pinpoint standards or assessment items that were commonly problematic for students.

T **THEORIZE** root causes for identified growth trends, strengths, and gaps in performance. Are there problems with instructional practices? Is there a specific content item or concept that is especially difficult for students? All meeting attendees should consider the driving factors that are producing specific results.

A **ACT** on consensus theories. Teachers should collaboratively plan and implement instructional actions, modifications, or interventions to address negative growth trends or gap areas in student performance or to sustain areas of established strength. Actions, modification, and interventions can be applied to individuals or groups of students.

Source: Doing What Works, Washington Office of Superintendent of Public Instruction, Washington School Information Processing Cooperative, and Public Consulting Group [48]

D.A.T.A. Protocol Implementation Checklist

<u>Directions</u>: This checklist outlines specific action steps that teachers can take before, during, and after meetings to analyze student data and use student data to inform instructional planning. Use this checklist to ensure appropriate actions are taken and support improved collaboration.

DETERMINE	YES	NO
1. Have we determined objectives before meetings to provide enough time to allow individual teachers to prepare (e.g., two days)?		
2. Have we disseminated a list of required materials and data that meeting participants will need?		
3. Have we decided which meeting participants will facilitate analysis and discussion of specified student data (e.g., a team leader) and lead the agenda?		

ANALYZE	YES	NO
4. Have we analyzed and reviewed data collaboratively throughout the meeting?		
5. Have we identified differences in proficiency and mastery between student groups or individual students?		
6. Have we identified common areas of strength and problem areas across the student population (e.g., a specific standard, a given item)?		
7. Have we calculated and evaluated performance growth between comparable assessments and data to assess trends?		

THEORIZE	YES	NO
8. Have we theorized root causes for identified strengths, gaps, and trends?		
9. Have we evaluated potential problems or discrepancies with related instructional activities and materials?		
10. Have we considered non-instructional factors (e.g., attendance, behavior) as root causes for performance issues?		
11. Have we isolated student needs —either group or individual—to target via instructional planning, modifications, and interventions?		

ACT	YES	NO
12. Have we brainstormed potential strategies and resources to address student performance needs?		
13. Have we selected strategies and resources via consensus to use with students?		
14. Have we developed an action plan based on student needs to guide instructional planning, modifications, and interventions?		
15. Have we selected the individual(s) responsible for implementing the action plan?		
16. Have we set a timeline for the implementation and evaluation of the action plan?		
17. Have we determined how to assess the impacts of the action plan on student performance?		

Source: Doing What Works, Washington Office of Superintendent of Public Instruction, Washington School Information Processing Cooperative, Public Consulting Group, Harvard Graduate School of Education[49]

Data-Driven Dialogue: Phase One Predictions

<u>Directions</u>: Use the following prompts to guide individual reflection regarding prior knowledge and surface assumptions and to make predictions. This reflection supports participants' readiness to examine and discuss data. Following reflection, engage in a dialogue about your responses with other participants.

I assume...
I predict...
I wonder...
My questions/expectations are influenced by...
Some possibilities for learning that these data may present...

Source: School Reform Initiative[50]

Data-Driven Dialogue: Phase Two Go Visual

<u>Directions</u>: Use the space below to draft visual representations of the data before transferring representations to large sheets of paper, walls, etc. Participants may create visuals individually or in small groups. In this activity, participants engage with the data (e.g., highlight trend lines, plot data on charts, color code data) to deepen understanding.

Source: School Reform Initiative[51]

Data-Driven Dialogue: Phase Three Observations

Directions: Use the following prompts to record data observations. Participants then engage in a discussion about what they observe in the data. Dialogue during this phase does not include conjectures, conclusions, or similar statements, but instead, provides an opportunity to highlight quantities, relationships, and other facts.

Remember: Just the facts! If you catch yourself using the following words, then stop:

- Because;
- Therefore;
- It seems; and
- However.

I observe that...
Some patterns/trends that I notice...
I can count...
I'm surprised that I see...

Source: School Reform Initiative[52]

Data-Driven Dialogue: Phase Four Inferences

Directions: Use one or more of the following prompts to reflect on the data. This reflection may include determining explanations for the observations from Phase Three, identifying other data that the data team still needs, offering solutions or responses, and determining data needed to monitor the impact of solutions or responses.

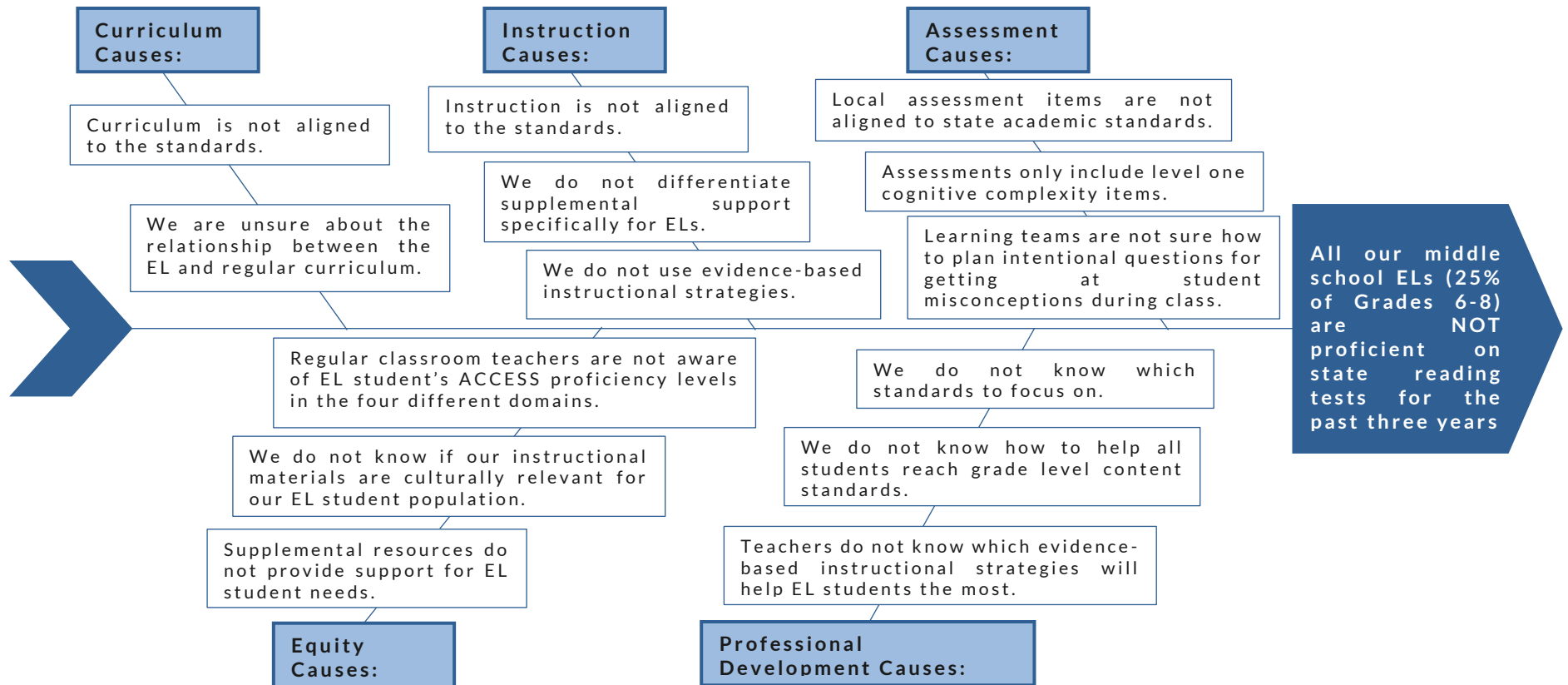| |
|---|
| **I believe the data suggest...because...** |
| **Additional data that would help me verify/confirm my explanations include...** |
| **I think the following are appropriate solutions/responses that address the needs implied in the data...** |
| **Additional data that would help guide implementation of the solutions/responses and determine if they are working include...** |

Source: School Reform Initiative[53]

English Language Learner Reading Root Cause Analysis

Directions: The following fishbone analysis example demonstrates how challenges (e.g., English language learner (EL) test results) often have more than one root cause. These causes may become clear when considering the physical, human, and organizational causes within a district, including those concerning equity.

Use the example below to guide an RCA. The problem appears in the "fish head," and the categories and causes appear throughout the body.

Curriculum Causes:

Curriculum is not aligned to the standards.

We are unsure about the relationship between the EL and regular curriculum.

Instruction Causes:

Instruction is not aligned to the standards.

We do not differentiate supplemental support specifically for ELs.

We do not use evidence-based instructional strategies.

Regular classroom teachers are not aware of EL student's ACCESS proficiency levels in the four different domains.

We do not know if our instructional materials are culturally relevant for our EL student population.

Supplemental resources do not provide support for EL student needs.

Assessment Causes:

Local assessment items are not aligned to state academic standards.

Assessments only include level one cognitive complexity items.

Learning teams are not sure how to plan intentional questions for getting at student misconceptions during class.

We do not know which standards to focus on.

We do not know how to help all students reach grade level content standards.

Teachers do not know which evidence-based instructional strategies will help EL students the most.

Equity Causes:

Professional Development Causes:

All our middle school ELs (25% of Grades 6-8) are NOT proficient on state reading tests for the past three years

Source: Minnesota Department of Education [54]

CREATE A PLAN AND ACT

Build a Logic Model

Using root causes and targeted strategies, data teams must present findings to internal and external stakeholders to demonstrate reasoning and implementation details. Teams often present this information through logic models.[55] Logic models provide visual representations of action plans that drive educational programs. Logic models present a framework with the following details:[56]

- What the data team wants to accomplish;
- How the data team intends to reach its goals; and
- How the data team will track progress.

Logic models typically include the same general components: inputs, activities, outputs, and outcomes and impacts. The following figure contains each component, a guiding question, and examples to support the creation of logic models.

Logic Model Components

COMPONENTS	INPUTS (Resources)	ACTIVITIES	OUTPUTS (Deliverables)	OUTCOMES		
				(Short Term)	(Medium Term)	(Long Term)
Guiding Questions	What resources are or could reasonably be available?	What will the activities or events be to create the deliverables?	What are the initial products of these activities?	What changes are expected in the near future?	What changes are wanted after the initial outcomes?	What changes are hoped for over the long haul?
Examples	▪ Time ▪ Staff ▪ Equipment ▪ Materials	▪ Workshops ▪ Meetings ▪ Curriculum redesign ▪ Training	▪ Number of participants served ▪ Number of sessions held ▪ Curriculum plan created ▪ Worksheets or handouts	▪ Knowledge or awareness gained ▪ Understanding gained ▪ Skills gained ▪ Attitude change ▪ Intention to implement ▪ Opinions ▪ Aspirations ▪ Motivations ▪ Perceptions ▪ Verbs: increase, decrease, maintain, reduce, expand	▪ Course grades or success ▪ Grade point average ▪ 30 units ▪ Three-semester persistence ▪ Transfer prepared status ▪ Completing Basic-Skills sequence	▪ Goal A: Enrollment at the college ▪ Goal B: Successful course completion ▪ Goal C: Basic-Skills sequence completion ▪ Goal D: Certificate or degrees awarded ▪ Goal E: Transfers to four-year colleges or universities

Source: North Orange County Community College District School of Continuing Education[57]

Additional details and tips for building a logic model are available through the Institute of Education Sciences and the North Orange County Community College District, School of Continuing Education Office of Institutional Research and Planning:[58]

- **[Institute of Education Science](#)**
- **[North Orange County Community College District School of Continuing Education](#)**

Write SMART Goals

To support the data team and key stakeholders with creating change indicators and measuring progress, data teams should craft SMART goals.[59] These goals, described in the following figure, help teams simplify complex problems and ensure that leaders have clear evidence of change.[60]

SMART Goals

S	**Specific:** What are the specific criteria against which stakeholders will judge the outcome?
M	**Measurable**: What will be the method or tool used to measure progress?
A	**Action-oriented**: Is there a consensus among stakeholders that this is a worthy outcome?
R	**Realistic**: Is this outcome sufficiently bold, yet still achievable given available resources, knowledge, and time?
T	**Timed**: Does the indicator specify by when the school or district will reach the intended outcome?

Source: Massachusetts Department of Elementary and Secondary Education[61]

Spotlight: Morris School District

Morris School District (MSD), located in Morristown, New Jersey, follows its "Equity and Inclusion Action Plan: Promoting Lifelong Success for Each Student" to guide discussion and implementation of equitable district practices. The most recent plan, **[here](#)**, includes the following SMART goals across five categories:[62]

- Curriculum and Instruction
  - By 2022, 50 percent of each race/ethnic and socio-economic subgroup of students in Grade 12 will participate in at least one Advanced Placement class.
  - Non-EL, economically disadvantaged students will pass the English Language Arts New Jersey Standardized Assessment at the same rate as the "all student" New Jersey average.
- Developing Capacity in Human Resources
  - MSD will annually conduct a Diversity Recruitment Job Fair on the MSD campus starting in 2018-2019.
  - MSD will develop and organize interviewing and hiring demographic data starting in 2018-2019.
- Professional Development and Training
  - By July 2019, the three-year Equity and Inclusion training outline will be submitted to the Board of Education for approval.
- Relationships and Partnerships
  - The district Equity and Inclusion Leadership Team and the Equity and Inclusion Community Alliance will be created in the fall of 2018.
- Social Networks and Social Capital
  - By July 2019, create and manage a K-12 data system that measures student participation in co- and extracurricular activities and after school programs.
  - By June 2019, 80 percent of each subgroup in Grade 6 will participate in at least one co- or extracurricular activity or after school program.

Subsequent stages within the data review process include building official action or improvement plans, implementing changes, and evaluating impact[63]. However, equity data review protocols do not all include these stages as they may fall outside the data team's responsibilities for certain institutions.[64]

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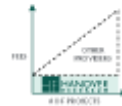200+ analysts with multiple methodology research expertise

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