

Identifying Appropriate Data Sources

While there are many different types of educational data, our systems can place heavy emphasis on a small set of data sources—often large-scale, quantitative measures, like annual state assessment results—that are easy to compare across schools and districts. But these data do not provide a complete picture of learning and are often not well suited to many of the important decisions we make to improve systems at the local level. In this article, we will explore different types of data and consider some practices that will allow us to use a wider range of data more effectively.

Levels of Data

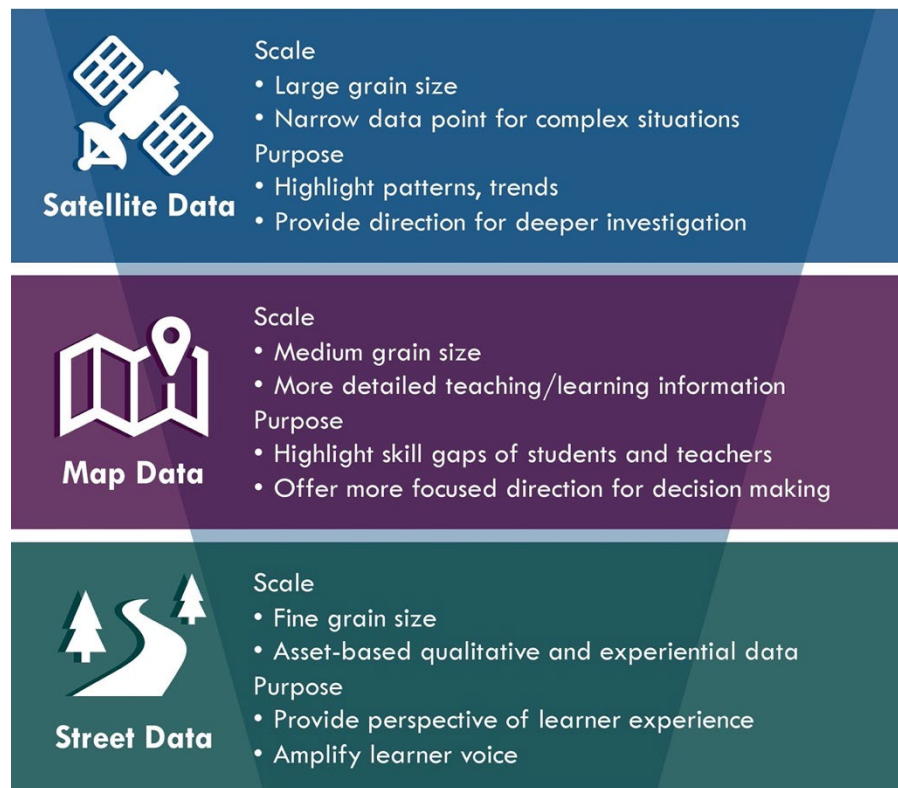
In the book, *Street Data* (2021), authors Safir and Dugan describe three different levels of data:

- **Satellite Data:** These large grain size data are useful for highlighting patterns and trends and providing direction for deeper investigation. These data are best for identifying questions, not providing answers. Additionally, these data are often removed both by design and timing from day-to-day decision making in a classroom and provide a very narrow data point for complex situations. Satellite data can include large-scale test scores, attendance patterns, graduation rates, and data about adults like teacher and principal attrition and parent participation rates.
- **Map Data:** These medium grain size data are closer to the school and classroom, capturing more detailed information about teaching and learning. These data may include real-time observation data, student and family survey data, and student work samples. These data can provide meaningful information to provide focused direction for decision making.
- **Street Data:** These data give us an “on-the-ground” perspective of the lived experience of learners. They are asset-based qualitative and experiential data rooted in student voice that help us understand how students are experiencing their education.

While there are benefits and limitations to these different levels of data, our systems tend to prioritize satellite data and completely leave out street data that is essential for truly understanding the human experience of our students. Without considering these data, we risk making consequential decisions without understanding the root causes, implications, and best

solutions. As we consider different data practices and sources of data, keep these different levels of data in mind. Figure 1 shows these three levels of data.

Figure 1. Three Different Levels of Data



Data Practices

Before we consider different types of educational data available, let's address some essential data practices that will help you use data in ways that provide a more complete, accurate, nuanced, and equitable picture of teaching and learning from which you can make decisions. These data practices are described in Table 1.

Table 1. Data Practices

Data Practice	Description
Align Data to Your Purpose	Selecting the right data is key to understanding and addressing inequities and improving outcomes in education. Data should have a direct connection to the problem you are trying to understand or the outcomes you are trying to improve. As you consider data sources, ask if these data can actually provide insight that can help you understand the problem you are trying to solve, develop a response, and monitor or analyze the progress of your response.
Use Multiple Measures	Any data source provides a specific perspective on an issue or problem. Using multiple and diverse sources of data can help provide a robust picture of learning. Using multiple measures does not require a deluge of data that can be hard to make sense of; rather, it entails being intentional about different data sources that can provide meaningful information.
Move Beyond Using Only Numerical Data	We often think of data that can be easily quantified and analyzed in aggregate (e.g., test scores, graduation rates, attendance data). These data are useful and can provide information about big picture patterns and trends. However, these data are usually satellite data and do not provide context, detail, and nuance that can be important for understanding and responding to issues. Qualitative data, including the voice of students, families, and teachers as well as documents that can provide insight into learning conditions, like syllabi, lesson plans, or student work can be essential for understanding the human side of teaching and learning.
Attend to Data Quality	We cannot take all data at face value without considering the quality of the data. It is important to understand how the data were collected, managed, and retrieved before deciding how much stock to place in your observations about the data. For example, with assessment data, it is important to understand the assessment and how it was administered before interpreting the results. With survey data, it is essential to consider the design of the survey and the representativeness of the respondents before interpreting the results.
Keep Students at the Center	It is easy to get caught up in data—looking at trends and patterns in the context of policies and actions—and lose sight of the students that you are aiming to better serve. As you use data, remember to keep the context of the lived experience of your students front and center. One way to do this is to ensure you have data that reflects the lives of your students.
Use Data Collaboratively	Data are most powerful when they are used as part of a collective sensemaking process among educators. By using a structured data analysis process in a collaborative group, educators can harness multiple perspectives and ideas and

Data Practice	Description
	can develop and implement responses more systematically to better support improvement.
Interrogate Bias	We all bring unconscious bias to our analysis of data. Bias can take many forms: racial and ethnic bias, bias toward certain behaviors and attitudes, bias about teaching and learning, etc. Working with colleagues to unpack biases, creating space to be honest and vulnerable about biases, and building skills to name bias in action are all important processes for more effective data use.

Types of Data

Table 2 includes some primary categories of educational data, not an exhaustive list. Keep in mind that data should be aligned to an educational decision maker’s purpose. Some of these data are more suited to answering questions about system-level conditions, while other data are better used to answer questions about classroom-level instruction.

Remember to think broadly about quantitative and qualitative data sources. Qualitative data can be collected through a variety of methods including surveys, focus groups, interviews, observation, and document reviews.

Table 2. Categories of Educational Data

(Adapted from the Minnesota Comprehensive Needs Assessment Facilitator Guide)

Data Category	Description	Examples
Student Outcome Data	<p>Academic Outcomes: These data include information about learning outcomes including information about assessment data, grades, postsecondary and workforce data, graduation, and course completion.</p> <p>Action Data: These data provide information about actions taken by students and families and can be used to make inferences about both student opportunities to learn,</p>	<p>Academic Outcome Data</p> <ul style="list-style-type: none"> Standards-based state summative assessment data (Minnesota Comprehensive Assessment [MCA], Minnesota Test of Academic Skills [MTAS]) Classroom and district assessment data Diagnostic and intervention assessment data Student work samples and portfolios

Data Category	Description	Examples
	<p>experience with learning, student and family engagement, and perceptions of school.</p>	<ul style="list-style-type: none"> • Student self-assessment data • Academic dialogue • Grades and GPA • Credit accumulation • Graduation rates • Course completion • Postsecondary and workforce data • Kindergarten readiness data • High quality Pre-K program data <p>Action Data</p> <ul style="list-style-type: none"> • Enrollment data • Attendance data • Program participation rates • Extracurricular participation • Communication records
<p>Supportive Learning Environment Data</p>	<p>These data can contribute to a general picture of the climate, culture, and experience of learners and educators within a district or at a particular school. This domain can include data that can support identification of inequities in how learners experience school (e.g., disproportionality in areas like discipline and special education).</p>	<ul style="list-style-type: none"> • School climate and culture surveys • Physical state of the environment • Discipline data • Special education identification and participation data • English language proficiency data (ACCESS and ALT ACCESS) • MTSS data • MnMTSS self-evaluation • Tutoring logs • After school tutoring data • Counseling referrals • Screening data • Physical health data • User experience data (e.g., shadowing a student or process maps) • Student and family interview data • Focus group data

Data Category	Description	Examples
Ambitious Instruction Data	<p>These data provide information about the curriculum, including what is taught and when, the range of courses and content areas offered, and alignment to grade level academic standards. Additionally, data in this category provide information about instruction, including how the teacher taught and supported student learning of the content, including the tasks, activities, strategies, and interactions employed to support learning.</p>	<ul style="list-style-type: none"> • Standards • Curriculum publisher materials • Curriculum scope and sequence documents • Course catalogues • Syllabi • Classroom observation and learning walk data • Data about intervention services • Lesson plans and instructional materials • Teacher self-reports • Feedback from students • Student work samples
Collaborative Teachers	<p>These data provide information about the characteristics of educators and of their experiences with and perceptions of their jobs.</p>	<ul style="list-style-type: none"> • Teacher years of experience • Certifications and credentials, licensure reports • Demographics • Professional learning data • Staff satisfaction surveys • Staff attendance • Staff retention • Professional Learning Community (PLC) records and artifacts • Instructional coaching notes and records
Learner Data	<p>Includes demographic data such as characteristics and experiences of students, as well as data about learners as individuals. These data can be used to support disaggregation of data, as well as to provide a picture of learners as unique individuals with assets and experiences that can be brought to bear in learning.</p>	<ul style="list-style-type: none"> • Age • Race/ethnicity • Gender • Family information (e.g., economic status, educational attainment) • Disability status • English learner status • Health data • Student and family interview data

Data Category	Description	Examples
		<ul style="list-style-type: none">• Data about intervention, support, and extracurricular activities• Home language survey data• Observations• Student artifacts• Program participation

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