

Using Non-Assessment Data for School Improvement: Considerations, Data Sources & Use Cases

The purpose of this document is to support districts with the adoption and use of non-assessment data to inform school improvement efforts. This is particularly relevant given the reduced availability of state summative data during the current year. The document will highlight key considerations for data use, data sources that may not have previously been considered for improvement planning, and use cases related to improvement planning.

Background

The monitoring and evaluation of school improvement efforts has traditionally focused on test scores as a primary outcome measure. Due to the COVID pandemic, much of this data may not be available for current planning efforts. In Colorado, the CMAS, PSAT, and SAT assessments were not administered in Spring 2020. In addition, shifts in pedagogical practices and instructional delivery methods (e.g., on-line and hybrid learning) have increased the need for local education agencies to broaden their use of data for improvement planning purposes. Prior to the adopting and using new data sources for improvement planning, schools and districts are encouraged to consider the following key recommendations outlined below.



Key Recommendations for Data Use and Adoption

The use of data for improvement planning work should be informed by six key considerations. See the Additional Resources section at the end of this document.



- 1) ***The district and/or school needs to cultivate a positive culture of data use for continuous improvement.*** Without a data-driven culture, it is much more likely that changes and/or efforts related to the use of new data will be poorly received and may even run counter to school improvement efforts. It is important to consider how to understand and address staff questions and concerns about data use (e.g., through a collaborative decision-making process) and provide information on how the newly adopted data will be used to inform and support practice in a constructive, non-punitive manner.

- 2) ***A data infrastructure must be available to meet the needs of the district and/or school.*** In practice, changes in measurement require modifications to data systems. Effective data management should include: a) developing appropriate data tracking and monitoring tools; b) identifying and understanding the data tools already available; c) determining how different data sources are being maintained; and d) pulling data together to a common location and format to increase usability. Without this type of infrastructure, data will likely have reduced accessibility and utility – which may lead to staff frustration and a lack of ownership.

As an example, teachers may be collecting attendance data on individual classroom spreadsheets. A whole school infrastructure initiative may examine what data tools or information systems are available (e.g., Infinite Campus), determine the system's reporting abilities, develop a common process/location for entering the data, train staff and communicate expectations, and then develop a data reporting plan. Ideally, this will lead to process improvements, such as moving a spreadsheet collection into the student information system.

- 3) ***The intent and purpose of the adoption of the proposed data should be understood.*** It is necessary to build literacy around any collected data that are used, including the purpose (e.g., what is measured, limitations). This support of data literacy by educators should be progressively built as they engage in using the new data and understanding its implications for their practice. School leaders should consider how time is made available for conversations that include the review of this data (i.e., as a part of the logistics in operating school during the current year).
- 4) ***The quality and utility of the proposed data should be considered.*** This includes consideration of the reliability and meaningfulness of the selected data for improvement planning, as well as the frequency of data availability for progress monitoring. For example, is the measure of interest available for comparison annually or even daily? Also, how comprehensive is the data? Does it represent all students or just a certain group? Similarly, does the data appear to reflect the concept of interest? In other words, the data should be considered to have face validity. Lastly, given differences in quality amongst data, consider the stakes associated with using the data for decision making. High stakes decisions should not be made if the quality of the data is poor without additional context, such as triangulating findings with other available data sources. Triangulation is the practice of using multiple sources of data to answer the same question – which will strengthen any related findings.
- 5) ***Data should be available as a continuous source of monitoring to provide a measure of the effectiveness of program implementation.*** The adoption and use of data should be action oriented. How the data could be used as part of school improvement efforts should be considered prior to adoption.
- 6) ***The adoption of data that allows for target setting in a variety of ways should be preferred.*** Consider collecting data that allows for comparison to state targets, comparison to cut-points associated with available normative data, outcome-based growth targets, and/or a determination of targets based on some defined standard (e.g., on-track target). For example, data disaggregated by student group or grade level may be easier to compare to existing state data sets.

Non-Assessment Data for School Improvement

The use of non-assessment data for school improvement efforts is based on the belief that many different measures may be leading indicators of successful academic, postsecondary, and workforce readiness outcomes. The department,




in consultation with various stakeholders, has developed a list of potential non-assessment data sources that may be used within improvement planning processes (see table 1). The list, while not meant to be comprehensive, provides many possible data elements for use in school improvement plans. Additional resources exist that may illustrate additional data that may be used (e.g., Victoria Bernhardt's, 'Data, Data, everywhere: Bringing all the data together for continuous school improvement'). The availability of some measures may also be tied to Colorado data submission requirements. For a list of data submissions including a description and their current year status, visit:





<http://www.cde.state.co.us/uip/resources>.



Additional information concerning table 1 includes:

- The metrics have been grouped into larger categories representing different areas of focus. These categories contain data that have some conceptual overlap and, in some cases, may not be completely distinct from some of the other presented data in that category. The selection of specific measures for school improvement efforts should be informed by the previously mentioned key recommendations for data use and adoption.
- The frequency in which the measure is likely to be available is presented (i.e., by period, daily, weekly, monthly, quarterly, fall term, spring term, or on an annual or variable basis). This will help inform how the measure may be used for progress monitoring along with providing insights into the demands associated with tracking the data. The identification reflects the shortest unit of time in which the measure can likely be measured. It is reasonable to assume that less common frequencies would also be available for monitoring. For example, if something is identified as weekly then daily monitoring would likely not be possible but monthly, quarterly, and longer duration monitoring would be possible.
- The table indicates possible metrics that may be used to track changes to the identified data element. Typically, this reflects a calculated rate or percentage. Again, the table reflects some possibilities but not necessarily all options.

Table 1. Non-Assessment Data Sources for Improvement Planning

Area	Measures	Frequency	Potential UIP Metrics
 Student Engagement	Attendance / Tardiness	Period	Average Daily Attendance (ADA) Rate Percent Chronically Absent; Prior Attendance
	On-line System	Daily	Count of Log-Ins, Activity Completion, Log-in Duration, Percent of Students Logging-In
	Truancy Rates	Daily	By Student Group, by Learning Type
	Course Variation	Quarterly	Count, Percent of Enrolled Courses, Type (core, elective)
 Social Emotional Learning Engagement (SEL)	Specific SEL Lesson Assessments	Weekly	Content Retention Over Time, Topics Requiring Revisiting
	Outreach to Counselors	Daily	Count, Frequency, Themes
	Mental Health Referrals	Daily	Frequency of Attendance, Availability of Services
	Teacher perception of SEL Instruction/Data	Daily	Teacher Comfort Level in Lesson Delivery
	Assignment Completion/ Check-ins	Daily	Count, Percent Completed
	Student Satisfaction with Course and Instructor (survey)	Daily	Student Satisfaction (rates, average on scale, Percent of students satisfied); Count, Percent Completed, Open Ended Response
	Student Extracurricular Activities	Daily	Participation Rate; Attendance Rate in Activities
	Assessment Participation	Variable	Rate of Participation; Percent of students without Results
	Level of Participation in Online Discussion Forums	Daily	Frequency of Contributions
	Classroom Culture	Daily	Observational Rubric Score; Survey Agreement Rates
 Instructional Delivery	Small Group (in-person)	Daily	Percent of Instructional Time
	Remote Participation	Daily	Frequency of Log-ons, Time of Log-on
	Blended Participation	Daily	Frequency and Time of Participation
	Synchronous/Asynchronous	Daily	Type/Duration of Formative Feedback
	Intervention Participation/Impact	Daily	Participation Rates, Percent of Membership
	Performance on Assignments	Daily	Points Earned, Grade, Percent of Students Passing
	Teacher Retention	Annual	Percent of Teachers Retained Between Years by School; by Content Area (e.g. math, science, special ed)

Area	Measures	Frequency	Potential UIP Metrics
	Virtual Walk Through	Daily	Observation Review
	Learning Model	Daily	Participation in Learning Model (in person, online blended, small group, etc.)
 Behavior	Referrals	Daily	Frequencies/Rates, by Location, by Type
	Suspensions (In-School/Out of School)	Daily	By Type, Duration, Disaggregated Groups
	Behavior Incidents	Daily	Location, Type, by Grade, Percent of Membership
 Family Partnership	Survey Response Rates	Variable	Count, Percent of Total
	Parent Organization Participation (PTO/SAC/Gifted Parent Group)	Variable	Percent of Total Parent/Guardian Participation
	Parent Teacher Conference Participation	Variable	Frequency/Rates of Attendance
	Satisfaction Survey Results	Annual	Percent Agreement
	Return Rate to School	Annual	Percent Stability/Mobility Rate, Transfers
 Post-secondary & Workforce Readiness	Grade Point Average	Quarterly	Weighted/Unweighted GPA; by Content Area and Grade Level
	Credit Accrual/Course Completion	Quarterly	Credits Earned, Percent of Course Plan Completed
	SAT Participation (for optional administration)	Fall	Participation Rates
	ICAP Progression	Variable	Percent of Goals Met
	FAFSA Completion	Spring	Percent of Seniors Completing
	College Application Completion	Spring	Percent Completed; Count of Applications
	CTE Participation	Variable	Enrollment Rates
	Industry Credential Attainment	Variable	Certificate Completion Rates
	Graduation/Dropout Rates	Annual	On-time & Multi-Year Rates; by Disaggregated Groups
	Matriculation Rate Change by type (2-yr, 4-yr, CTE) and degree	Annual	Change in Count, Change in Percent of Membership; by Disaggregated Group
 Learning	Online/blended Learning Self-Assessment	Daily	Percent Agreement (items or scale)
	Accessibility Rates (in person, online, etc.)	Daily	Frequency or Percent of Contacts and/or Sign-ons

Area	Measures	Frequency	Potential UIP Metrics
Infrastructure	Staff Working Conditions/Needs	Monthly	Survey responses; Percent Agreement; Open Ended /Item Responses
	Infrastructure to Collect Data	--	IT Audit of Data Storage/Reporting Systems
	Local Strategic Plan Indicators	Variable	Identify Metrics from Strategic Plans
 Early Childhood Education (Resource)	Early Childhood Ed Programming	Quarterly	Count/Percent of Students Served
	Results Matter Data	Annually	Performance on Academic & Developmental Domains; Count/Percent of students Reaching
	Full/Half Day Kindergarten	Quarterly	Participation Rates; Attendance Rates
 Indicators of Need	Free-and-Reduced Meal Participation Rates	Annually	Application Completion; Participation in Meal Program
	Resource Referral (medical, mental health, CCAP, etc.)	Variable	Availability of Resources; Mechanisms for Information

Applications of the Use of Non-Assessment Data for Improvement Planning

The use of non-assessment data to support the improvement planning process is illustrated by the two examples presented below. For both scenarios, a problem of practice associated with the improvement planning process is presented, key considerations are analyzed, and a solution along with next steps is presented based on the available information. Each example provides a basic illustration of how a school chose to incorporate new data and/or data-based approaches to their current work (e.g., gaps from changes in available data and/or instructional approach). Additional information that informed these decisions can be found in the Unified Improvement Plan (UIP) website and guidance document available at: <http://www.cde.state.co.us/uip/uipoverview>.

For each case, the key recommendations for data use and adoption are considered. In one case, data elements are selected from table 1. The presented approaches are illustrative only and may be one of many that could be considered as an improvement planning team considers 1) adjusting their priority performance challenges, 2) establishing targets with non-assessment data and/or 3) adopting new measures for use as part of a progress monitoring process.

Problem of Practice #1: Shifting Progress Monitoring at New Dawn High School

The New Dawn High School improvement planning team is considering updating one of their priority performance challenges (PPC) based on the absence of 2020 CMAS state summative assessment data. During 2019, New Dawn High School reported large performance gaps in math achievement between their English Learners (EL) and non-English learners (Non-EL). The percentage of students meeting or exceeding expectations was 74% for non-EL students; for EL students only, 12% met or exceeded expectations. Similarly, growth percentiles for EL students were far below the state at the 25th median growth percentile. This is also well below the 63rd percentile for their non-English learners at the school. Building on their prior PPC and maintaining the focus on EL students, the planning team is considering changing the data source to better align with EL progress monitoring. Teaching staff have been especially concerned about declining student engagement with the proposed shift to a hybrid learning approach following three months of on-line instruction that wrapped up the 2019-2020 school year.



Key Considerations:

- The school identified a large EL performance and growth gap PPC in their 2019-2020 unified improvement plan.
- During the Spring of 2020, the COVID-19 pandemic resulted in a rapid shift to on-line instruction. However, attendance at NDHS was significantly lower for EL students during this time compared to their non-EL peers. School staff believes this loss of instructional time may have contributed to even larger gaps between the groups of students. So, in line with the previously identified performance challenge and prior root cause analysis, various attendance and engagement activities are being considered to help reduce the likelihood of a further impact from a hybrid instructional model.
- Given the absence of state summative data, the UIP development team decided that a measure of student engagement and/or attendance may be the most beneficial for monitoring to help reduce the likelihood of expanded learning gaps. The UIP planning team has agreed to examine both attendance and engagement for possible inclusion in the upcoming improvement plan.

Solution and Next Steps:

- The improvement planning team reviewed the student engagement measures in table 1 of this document and reviewed educational research for possible measures to consider for adoption. Based on the recommendations for data use and adoption, the team decided on using average daily attendance to track participation in the in-person instruction. Also, to monitor on-line work, the percentage of completed activities and corresponding assessments will be monitored with checks comparing EL and non-EL students. An intervention plan will be developed to support students that fall below identified target participation levels as determined by the newly adopted measures.

Problem of Practice #2: Target Setting with Non-Assessment Data at Sunset Elementary

A move to hybrid instruction at Sunset Elementary School has led to an increased focus on non-assessment data within their school improvement plan. The school staff, while having extensive experience with target setting using assessment data, are uncertain of the best approach for establishing targets with non-assessment data. The planning team has decided to meet to establish targets related to the level of student satisfaction regarding the new hybrid instructional program.



Key Considerations:

- The improvement planning team initiated their discussion by reviewing the six recommendations for data use and adoption. Given that student satisfaction survey data have been collected and used extensively within the district the first five conditions were determined to have been met.
- The sixth recommendation, ***'The adoption of data that allows for target setting in a variety of ways should be preferred'*** is then considered. Also, a CDE fact sheet concerning target setting with growth model data is reviewed for target-setting possibilities (click [here](#)). Following a period of brainstorming, several possible target-setting approaches were developed thus meeting the sixth recommendation for data use.

Solution & Next Steps:

- The student climate survey that is used at Sunset Elementary School has been administered both district-wide and nationally for the past five years. Item-level, scale level, and overall scores at the district and national level are available to use for progress-monitoring. This historical data provides multiple options for benchmarking student responses against established norms.
- The improvement planning team decided to continue with their review of survey items and scales to determine which one(s) would be best for measuring student satisfaction based on the instruction students are receiving. After reviewing the survey questions, they determine the points from one set of items would be the most helpful for gauging student satisfaction. The items within the scale called, 'quality of instruction' appear clearly aligned with their stated goal of monitoring student satisfaction with the hybrid approach.
- In determining growth targets for the year, they obtain data regarding reported satisfaction with their school's instructional approach during the prior year along with norms from national administrations. After examining the data, they see that their prior year scores already exceeded national norms. So, they decide not to use it for target setting given they already exceed national expectations.

Summary

Reductions in assessment administration because of the pandemic have led to an opportunity to strengthen improvement plans using non-assessment measures and metrics. The incorporation of new data elements should be informed by a series of key considerations to help ensure both buy-in and application to the improvement planning process to foster school improvement. This guidance document outlines such recommendations and provides a possible list of data measures and metrics that can be incorporated into the school improvement plan. The use of the recommendations and associated measures provide one approach to offset any reduction in available assessment data and provide a range of possibilities to help foster school improvement.

Additional Resources: Data Use Recommendations and Related On-line Resources

How to Create a Data-Driven School Culture.

<https://www.naesp.org/communicator-october-2017/how-create-data-driven-school-culture>

Understanding Data Culture: What Data Do Education Leaders Use and How Do They Use Them?

https://ies.ed.gov/ncee/edlabs/regions/appalachia/blogs/blog10_understanding-data-culture.asp

Using Data: Data Culture.

<https://eeducation.org/resources/using-data-data-culture>

Why K–12 Schools Should Establish a Data-Driven Culture.

<https://edtechmagazine.com/k12/article/2020/04/why-k-12-schools-should-establish-data-driven-culture-perfcon>

On Effective Data Management.

<https://aea365.org/blog/dan-jorgensen-on-effective-data-management/>

How Schools Should Approach Long-Term Data Management.

<https://www.jotform.com/blog/long-term-data-management-schools/>

Data Quality: Improving Education Data.

<https://nces.ed.gov/forum/dataqualitycourse/dataquality.asp>

UIP Target Setting with Colorado Growth Model Data

<http://www.cde.state.co.us/accountability/2019-5-15-target-setting-w-the-growth-model>

Data Driven Instruction Strategy Guide

<https://www.cde.state.co.us/uiip/strategyguide-datadriven>

National Implementation Research Network

<https://nirn.fpg.unc.edu/>

WHERE CAN I LEARN MORE OR GET ADDITIONAL SUPPORT?

The School Improvement & Planning team is available to provide professional development and technical assistance related to data use, state accountability, and improvement planning both remotely and in-person. For more information, visit:

http://www.cde.state.co.us/uiip/uiip_training or contact Erin Loften (loften_e@cde.state.co.us), Technical Supports & Planning manager.

For specific questions related to this resource, contact Dan Jorgensen, PhD at: Jorgensen_d@cde.state.co.us.