Leveraging Data for a Culture of Improvement
Priorities for District Leaders

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In spring 2020, school closures in response to the COVID-19 pandemic dramatically changed the conditions in which students learn and experience schooling. Now more than ever, it is important to collect and analyze data on student learning opportunities and outcomes in order to support improvement and address inequities. The lessons articulated in this brief from a June 2019 meeting of the California Collaborative on District Reform can help to inform this process.

Introduction

California educators and policymakers have embraced continuous improvement in education as a state philosophy and mantra. They have also taken concrete steps to enable that improvement. Among these steps was the 2019 passage of the California Cradle-to-Career Data Systems Act, which was designed to expand and improve the state's longitudinal student data system. Valid and reliable data are essential to improvement and equity, and the plans underway for the new state data system present opportunities to understand students' outcome trajectories in deeper ways, to respond more appropriately to evidence of progress, and to forge needed connections across systems and sectors. A transformed state data system is an important step forward.

Data systems alone, however, do not improve student outcomes. It is only when those systems are embedded within *cultures* of improvement and are enhanced with tools and practices for effective communication that we are likely to see real progress. In this respect, there is much to learn from experiences and lessons of local districts that have taken up the charge to improve access, use, and communication of data throughout their systems. This brief draws on insights and examples shared by district leaders, policymakers, researchers, civil rights advocates, and other education stakeholders during a June 2019 meeting of the California Collaborative on District Reform.

Taken together, these insights suggest a set of priorities for district leaders seeking to use data in the spirit of continuous improvement, and in service of all California students.

Priority 1: Identify the Information Needed to Solve Relevant Problems

Any data system should fundamentally revolve around providing information needed to understand and solve problems. Too often, conversations about data begin (and end) with what data are available rather than what information is needed to address a particular question or inform progress toward a specific goal. In the context of an emerging new state data system, local practitioners are looking forward to accessing a wider array of information from which they can draw for their local problem solving. But they recognize that the new system will retain many important limitations. For example, it will only provide data as recent as the previous academic year, constraining the ability of stakeholders to react to patterns in real time. The system will be limited in the number of indicators it includes and the number of agencies—education and otherwise—that it represents. Many metrics that are relevant to understand student experiences at the local level will not be available on a statewide basis even after the new system is fully designed and deployed. Furthermore, the system will not provide information about the context from which the data come or an interpretation of what they mean. For data to come to life in a process of

improvement, humans will need to access, make sense of, and act upon the information available.

Given the opportunities and constraints presented by an expanded statewide data system, school districts can play an important role not only in interpreting but also *in supplementing* the information provided by the state. Many California districts have already created their own data systems and dashboards to inform improvement at the local level. The lessons these districts have learned can be instructive to other leaders who are beginning to consider and build their own local systems.

Identifying and Prioritizing the Right Metrics to Inform System Goals and Users

One of the first tasks in designing a local data system is identifying and prioritizing metrics to address local needs and users. Different data are appropriate for different audiences and different purposes. A teacher trying to support a struggling student in his or her classroom requires evidence quite distinct from what a central office administrator needs to evaluate and refine a systemwide reading program, for example. District leaders should identify metrics based on the purpose(s) of their collection and use, keeping in mind that this will often take them beyond the information that happens to be easiest to access or that already appears on

In 2019, the California State Legislature passed the California Cradle-to-Career Data System Act, which lays out the parameters of a statewide data infrastructure designed to inform students, families, researchers, and a range of agencies about experiences and outcomes from birth through career. In 2020, a workgroup—with the support of two advisory groups and five subcommittees—is developing recommendations about the design and implementation of this system. The workgroup meets on a monthly basis; its recommendations will appear in a report to the California State Department of Finance and the California State Legislature. The advisory groups and subcommittees meet quarterly to inform these efforts.

For more information about the data system design process—including meeting agendas, meeting notes, work products, and other resources—please visit https://cadatasystem.wested.org.

the Dashboard. Smaller districts with limited data capacity could partner with or learn from neighboring districts, take advantage of existing consortia like the CORE Data Collaborative,[1] or get assistance from their county offices of education to decide which data they need and can feasibly collect or analyze.[2]

Including Both Leading and Trailing Indicators

Measures of high school graduation, A–G completion, or college matriculation are useful indicators of student outcomes at the conclusion of the school year or K–12 career, but they are not timely enough to help educators intervene with a struggling student in real time. In Long Beach Unified School District (USD), a district-developed data system also includes *on-track* measures for both graduation and A–G completion, which maps individual students' course completion data and grades throughout their high school career against the requirements for graduation and eligibility for the University of California (UC) and California State University (CSU) systems. Such information enables teachers and administrators to work with students and bring them up to speed while they are still in high school. More relevant for younger students, there are measures of high school readiness as well as data from a district assessment of foundational reading skills that enable users to drill down into skills like blending phenomes, diphthongs, and inflectional endings. These indicators shed light on the areas of focus where students, classrooms, schools, and even the district overall need attention in order to ensure student success at key points in their K–12 careers.

Examining Important Nonacademic Measures

Our understanding about the complexity of student learning environments and degree to which behavioral, social and emotional, and contextual factors shape academic performance continues to increase. The data that school systems collect and track should capture these important influences on student learning. Attendance and discipline data are the low-hanging fruit here, as schools are already required to collect these data. In San Bernardino City USD, a dashboard for principals on positive behavioral interventions and supports (PBIS) provides further detail to site administrators by summarizing the most frequent reasons for office referrals and suspensions (e.g., fighting, profanity, defiance) and the locations where violations take place (e.g., classroom, restroom, off campus). These data can help a principal recognize and address the most common behavioral challenges at the school site. Beyond these disciplinary measures, districts might incorporate prosocial indicators that help capture social and emotional assets among students and track progress in these domains.

Enabling Disaggregation to Expose Variation Among Schools and Students

Disaggregation can reveal inequitable opportunities and outcomes within the system and enable educators to design interventions and supports for students who are not performing at the same level as their peers. Just as important, they can uncover systemwide practices and biases that might unintentionally reinforce historical patterns of disadvantage. In Garden Grove USD, analyses of student grades in comparison with those students' state assessment results revealed that even when

students exhibited the same level of proficiency on externally administered exams, African American and Latinx students routinely received lower grades in their classes than did their White and Asian peers. This discovery led the district to engage teachers in a redesign of the district's grading policies to address academic priorities and equity concerns.

Allowing for Flexibility to Adapt as Necessary

Local efforts to collect and analyze data should have the flexibility to collect and monitor additional sources of data as new problems emerge. The ongoing process of reflection and adaptation that continuous improvement entails will inevitably reveal new insights about where problems—and their potential solutions—are located. Educators need the ability to adapt their data systems and practices to respond to new evidence as necessary. Conditions in which school systems operate evolve over time—or, as in the case of COVID-19 in spring 2020, rapidly and dramatically. Districts need the ability to access and analyze data related to the short- and long-term problems and disparities that result from change over time and crisis situations.

Priority 2: Build a Culture of Data Use for Improvement

Despite the promise offered by new data systems, data alone will never move the needle on student achievement. Rather, the success of any data system relies on the ability of local stakeholders to systematically *interpret and use* information to understand and overcome barriers to improvement. According to one district administrator, "A robust data system is critical, but insufficient. The real work is changing data practice and use." The leader added, "Most problems don't require more data. They require more insight, more innovation, and

better eyes." By building cultures of effective data use, school districts can maximize their potential to take advantage of new information.

Overcoming the Legacy of Punitive Accountability

Organizational and psychological baggage from prior data-based policies can pose obstacles to developing a culture of data use for improvement. A long-standing emphasis on data for accountability rather than for improvement may be at the heart of these challenges. Federal, state, and even local accountability systems have sought to promote student achievement by setting expectations for improvement, then publicizing results and applying sanctions when those expectations were not met. Data in these contexts have engendered cultures of fear. Stories of teachers manipulating student test scores are merely an extreme example of educators focusing their attention on being good enough to avoid punishment, rather than on embracing evidence of learning gaps and using that information to design supports and interventions.

From this context of external punitive accountability has emerged a related challenge: teacher and administrator mindsets at odds with a culture of improvement. When educators see data used as a hammer rather than as a flashlight, they may resist honest and open conversations for fear of criticism or damage to their reputation. A tendency often emerges to paint problems as outside one's locus of control, thus avoiding blame for circumstances that extend beyond the classroom walls or the school grounds. Teachers and administrators may also be prone to adopt an "endure and exit" approach to new strategies, believing from previous experiences that new efforts—and the leaders who spearhead them—are fleeting and can be outlasted with patience and minimal commitment to change. When teachers and administrators already work in

an environment with overwhelming expectations and insufficient time to manage them, it is easier to avoid practices that may call for new behaviors and ways of approaching the work of serving students. All these tendencies flourish in an environment short on trust, where educators have not experienced the goodwill and productive experiences that demonstrate a shared commitment and responsibility for students and for improvement from all levels of the system.

Capitalizing on Promising District Strategies to Foster a Learning Culture

Despite this legacy of punitive accountability, several promising practices underway in California districts can help foster more productive learning cultures.

Safe Spaces for Collaboration

First among these promising practices are opportunities to explore data with peers in safe and productive spaces. Professional learning communities (PLCs) within grade levels or content areas are one vehicle for this kind of interaction. According to a principal in a district that has embraced more data-informed educator conversation, "I used to think that data motivated. Now I think it just informs people. The real work is around the goal setting and the action, and the opportunity they have in grade-level meetings is to create action based on the data." When teachers can sit together and process data through discussion and collective planning, it enables them to see data as a tool that

can support their work. A former California Teacher of the Year similarly advocated for the importance of teachers having time to work through data together: "We can have amazing data systems, but without time for teachers to sit and talk and think, it's not going to move the needle anywhere."

Tools to Access and Understand Data

Tools to inform discussions about data—including those offered through local data systems—can help with the process. For example, the Long Beach USD data system features the automatic generation of "watch lists" that group students based on their areas of need, including lists that identify the most at-risk students for a given metric or collection of metrics. The system can even generate messages to the parents of students on a list. In these ways, the user interface of the data system simplifies a teacher's responsibilities by highlighting areas for attention and facilitating family communication. When tools like these make it easier for teachers and administrators to do their jobs, they increase the likelihood that educators will embrace new strategies and embed them in their daily practice.

Existing Mechanisms as Leverage for Improvement

Districts can also leverage existing mechanisms and structures in order to integrate data use into the work of school and district personnel. California schools receiving Title I funding, for example, are required to complete a school plan for student achievement (SPSA) on an annual basis. In Sacramento City USD, district leaders have asked school sites to provide evidence of their continuous

improvement practices in the SPSA by describing a root-cause analysis, articulating an improvement aim based on data, identifying a problem statement, and establishing plan-do-study-act cycles through which schools will explore solutions to the problems they have identified. In doing so, the district seeks to transform the SPSA from a mechanistic compliance process to a living document that facilitates continuous improvement habits. By embedding expectations for data use into other existing processes, district leaders in other settings might also find ways to encourage a culture of reflection and improvement.

Establishing and Building Trust

For teachers and administrators to embrace the ongoing collection and discussion of data, they need to trust that the data will be used in the spirit of improvement and not used to shame or sanction educators. When teachers and administrators feel unsafe in data-based discussions, fear can undermine culture-building efforts. Holding frank conversations about data may require a basic level of trust to begin, but those discussions can help to build trust in settings where it does not yet exist. As one principal observed, "Getting to know the families and sharing their stories is important— knowing kids not just as a number, but by name, and that means strong trusting relationships with families and with community partners." Building a culture of data use should therefore seek to establish and build trust across a range of stakeholders inside and outside of the system.

Priority 3: Communicate to Foster Understanding and Use of Data

In a context of continuous improvement, data are useful only to the extent that they can inform action. This means that any stakeholder accessing data needs to understand where to find information, what they are looking at, and how they—individually and collectively—can respond.

Considerations about communication are especially important in the California context, where the state has embraced the principle of stakeholder involvement in the development of district plans, but where many districts have struggled to engage with community members effectively. To achieve a partnership between families and community organizations, effective communication is critical to equipping a range of stakeholders with the ability to understand and discuss evidence of student progress. Several considerations may shape district approaches to communication.

Designing Messages for Specific Actors

Administrators, teachers, parents, and students may all require different kinds of information to play their roles in improving educational opportunities and outcomes. Communicating effectively is likely to require differentiation in the kinds of data a district shares and the formats through which different stakeholders access and use that information. As district leaders work to design accessible data systems and craft effective messages, seeking input from end users is critical to understanding

and designing for their needs. What do teachers need in order to effectively plan and execute high-quality classroom instruction? Ask them. What do students need to take ownership over their learning? Ask them.

As one example of a targeted message, several school districts have developed family-facing reports to inform students and families about the student's academic progress and engage them in the student's learning journey. These reports seek to provide individually tailored information that can inform concrete next steps for improvement. The text box about student reports in Stockton USD on pages 8–9 provides an example of ways in which a district used parent and student input to design these materials.

Making Information Actionable

For data to lead to improvement, consumers of information need to understand not only what the data tell them but also what they can do to respond. As a former superintendent observed, "Data [are] only empowering if the person on the receiving end feels that they have the power to do something about it." She continued, "Teachers care about data when [they are] related to their kids and when they feel there's something they can do about it." Data for any audience should be relevant to an area where that audience has the agency to address the evidence they see. The timing of communication around data can directly impact how useful it is for users. For this reason, a statewide data system, which shares information after the conclusion of a school year, is insufficient

for teachers to address learning needs in their classroom, and it is why local systems are important to supplement data from the state.
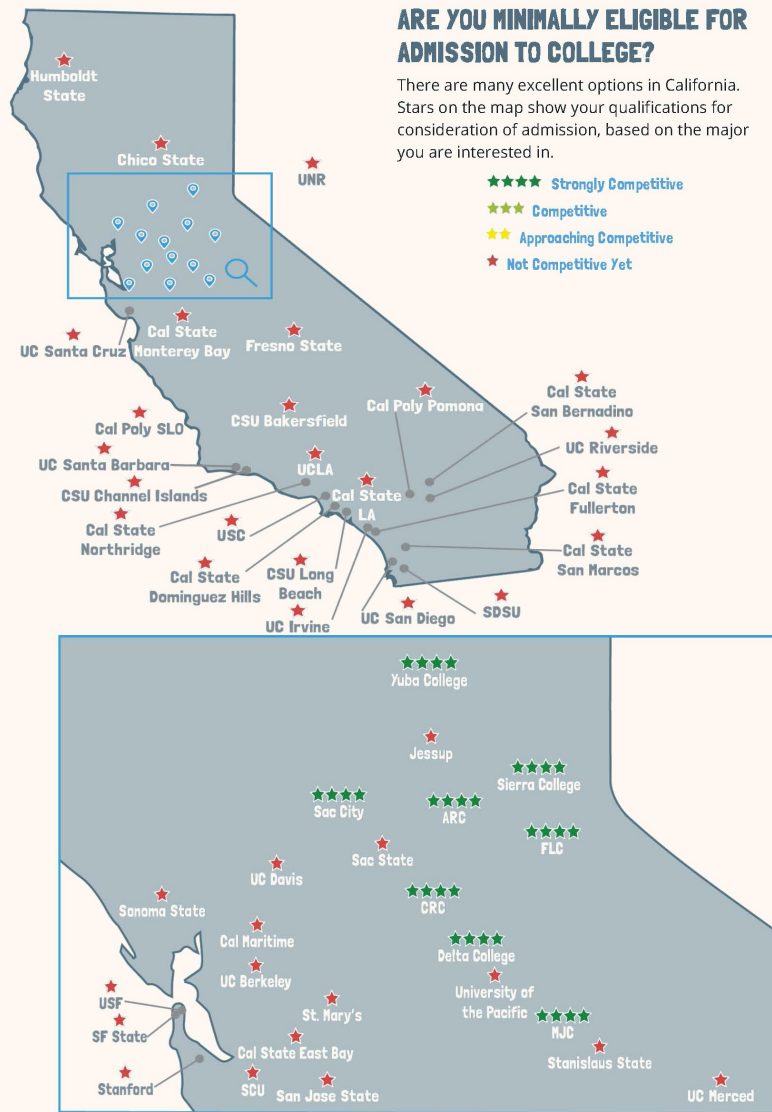
Data may be most useful when they connect users to strategies and supports that can help a user respond. A PLC structure, for example, provides a forum for teachers to examine data collaboratively and explore ways to improve classroom practice. Stockton USD's reports to students at the high school level include contact and scheduling information for the school's guidance counselor, enabling students to reach out directly to address areas of need revealed by the report (see text box on pages 8–9). San Bernardino City USD has a platform through which it shares social and emotional learning data for individual students collected through student surveys. A playbook embedded in the system provides users with strategies for acting on data trends that users observe and functions as a personal learning network where teachers can share ideas and experiences.

Putting It All Together: Communicating With Students and Families in Stockton USD

Student reports in Stockton USD illustrate how the considerations identified in this brief are reflected in a key district communication effort. To engage students in their own academic journey, the district sends tailored reports to middle and high school students and their parents three times per year.

Designing messages for specific audiences. Reports are designed specifically for individual students and their families to examine their progress and take action. The district makes the reports available in six languages to ensure accessibility for the full range of community members. As they developed the structure of the report, district leaders engaged students and parents directly in the design process so that the final product would address their needs and priorities. For example, although students preferred to receive the document electronically, parents overwhelmingly told the district that they wanted to receive a hard copy by mail. The cost to the district for three annual printings and mailings is substantial, but Stockton USD has embraced the cost in order to be responsive to student and family needs.

Eligibility for higher education: Based on a student's current grades and PSAT or SAT score, the Stockton USD report characterizes the level of competitiveness for various public and private college options.

ARE YOU MINIMALLY ELIGIBLE FOR ADMISSION TO COLLEGE?

There are many excellent options in California. Stars on the map show your qualifications for consideration of admission, based on the major you are interested in.

★★★★ Strongly Competitive
★★★ Competitive
★★ Approaching Competitive
★ Not Competitive Yet

Identifying and prioritizing the right metrics. The student reports include information directly relevant to the student's on-track graduation status and progression into higher education. This includes credit completion information related to high school graduation and A–G requirements. The report also includes a student's SAT score, grade point average, and a CSU index that can help a student gauge their admissibility to various CSU campuses. The report characterizes the student's competitiveness for various California higher education options based on their current academic profile (strongly competitive, competitive, approaching competitive, not competitive yet). The information students receive, however, is not limited to academic training. The district draws on results from a survey about the student's career interests to identify possible job options, median salaries for those jobs, and colleges and degree programs that would position the student well to enter that career.

Career options: Stockton USD uses information provided by students about their career interests to summarize workforce opportunities and the higher education options that might prepare a student for those opportunities.

CAREER INTEREST

A CAREER RECOMMENDATION IS:
Business Management & Administration

	HS Diploma		Associate's Degree		Bachelor's Degree		Master's Degree or Higher	
NorCal Growth Industry Jobs	Customer Service Rep.	Office Clerks	Office & Administrative Supervisors/ Managers	Human Resources Assistants	General & Operations Managers	Accountants & Auditors	Economists	Financial Managers
Hourly Wage	$17.15	$14.65	$27.21	$20.40	$53.75	$35.45	$65.51	$67.71
Median Annual Income	**$43,534**		**$49,525**		**$93,746**		**$89,232**	
Colleges to Consider	LBCC		LBCC		CSULB, UC Irvine, UC Riverside, SDSU, USC, UC Berkeley		UCLA, UC Irvine, USC, Cal Poly Pomona, UC Berkeley, UC Davis	
Degrees & Certificates to Consider	Certificates in General Business, Int'l Business, Management, and Marketing		Transfer Degree in Business Administration, AA General Business, Int'l Business, Management & Marketing		Bachelors in Business Administration, Management, Marketing, Business Economics		Masters of Business Administration, Economics	

Making information actionable. Beginning in Grade 7, students receive a report that indicates whether they are on track for high school graduation and A–G completion. By Grade 11, the report incorporates information about competitiveness within the University of California, California State University, and California community college systems. Merely receiving a status update, however, is insufficient and could be dispiriting for a student far from their desired end goal. Any off-track indicator appears in red and directs students to options for credit recovery courses or online classes. Finally, the report concludes with talking points for the student to address with a guidance counselor and a checklist of next steps, including contact and scheduling information for a conversation with the counselor.

On-track information: The Stockton USD report shows students their progress toward each of the seven A–G requirements for UC/CSU eligibility. In this snapshot, the report demonstrates that a student is on track for the history requirement, but needs to satisfy additional requirements to be on track for attaining the English requirement.

A–G (UC/CSU) REQUIREMENTS	1 Year	2 Years	3 Years	4 Years	HERE'S WHAT IT MEANS
History ("a") ✓					Two years with a C or better are required in history. You are currently ON TRACK in history. Nice! Improving your grades will make you more competitive for universities.
English ("b") ✗					Four years with a C or better are required in English. Unfortunately, you are OFF TRACK because of low grades or missing classes. English classes can be made up in credit recovery.

Priority 4: Work Across Institutions

Students' lives are shaped by many factors inside and outside of their school experience. Operating in an environment of continuous improvement means constantly exploring the underlying causes for key system outcomes and working to address them by expanding successes and changing areas of challenge. When students' struggles extend beyond the classroom walls, offering meaningful supports to students may mean coordinating with other organizations. Efforts to assemble data locally may be most effective when they involve collaboration with other institutions and agencies in the community.

These collaborative efforts are especially important for responding to the critical influence of factors outside the classroom on students' readiness to learn. Within-district systems for collecting and analyzing data can help to elevate issues related to students' social and emotional well-being—within parameters that protect student privacy. Expanding these efforts even further to consider information about homelessness, mobility, and interaction with the justice system adds context for educators seeking to understand students and position them to thrive in an academic environment.

As one example of what this kind of collaboration can look like, San Bernardino City USD has actively sought to partner with a range of community organizations as part of a broader collective impact strategy.[3] Although efforts to share data are still in early stages, one tactic is to create a "Handle with Care" designation that other agencies (e.g., social services, mental health services, law enforcement) and the district can use to communicate that a given student should be treated with special attention. In deference to privacy protections, such a designation does not include detailed personal information about the reason for the designation, but it can alert the school and partnering organizations that certain circumstances at play might require supplemental attention or supports.

In Stockton USD, a nascent effort is underway to establish a "children's cabinet," a coalition of organizations in the community that touch the lives of children and whose efforts can better serve students when designed in alignment with other organizations. This strategy is in the early stages of development, but it can lay the groundwork for shared review of student data and, in the future, data sharing across organizations.

Despite the promise of collaboration in the service of students, historically isolated practices and a lack of shared ownership can stand in the way of progress. Potential partners might not initially see an incentive for working together, and sharing data without an established foundation of trust could be perceived as a threat to individuals and organizations. Burdens of time and resources for working together, perceived or real, pose challenges. Privacy issues and the protection of individual student data also present barriers to sharing information across organizations. Progress toward collective commitment and responsibility for student success will require confronting and overcoming these obstacles.

Conclusion

California's movement to expand its longitudinal data system represents an exciting development that can improve our understanding of student opportunities and outcomes throughout their educational journey. It not only opens doors to new information but also potentially lays the groundwork for new levels of collaboration across education systems. Whatever opportunities the statewide system introduces, local school districts will play an essential role in creating the conditions for improvement to actually take place. By designing local systems to supplement the information provided by the state, building cultures of data use (and trust around its use), and communicating effectively about data to a range of stakeholders, districts and their partners can help fulfill the promise that data offer to make a difference for California students.

ENDNOTES

1. For more information about the CORE Data Collaborative, see https://coredistricts.org/our-work/improvement-communities/data-collaborative-community/.

2. For an exploration of regional collaborations among California education institutions, see Moore, C., & Bracco, K. R. (2018). *Scaling goodwill: The challenges of implementing robust education data sharing through regional partnerships.* Sacramento, CA: Education Insights Center. Retrieved from http://edinsightscenter.org/Portals/0/ReportPDFs/Scaling-goodwill-brief-Final.pdf.

3. Collective impact refers to the coordinated actions of stakeholders and organizations across different sectors to address a specific social problem. For more information about the collective impact work in San Bernardino City USD, see resources from the California Collaborative's March 2017 meeting, *Leveraging Partnerships to Improve Community Outcomes: Collective Impact,* at https://cacollaborative.org/meetings/meeting32.

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