

Building a Cradle-to-Career Data System in California: Lessons from the CORE Districts

Purpose of this Brief

California has recently embarked upon the development of a Cradle-to-Career Data System, which will connect data systems that are currently maintained and housed by different state agencies.¹ This system is expected to enable connections between the entities responsible for childcare and early education, K-12 education, postsecondary education, student financial aid, employment, and health and human services.

Since 2010, CORE Districts — a collaborative of eight large urban school systems in California — has been a leader in designing, testing, developing, and implementing data systems that support school improvement efforts in schools and school systems. In particular, CORE operates a Data Collaborative that unites its eight CORE districts with ten county offices of education and their school districts, several charter school networks, and individual school districts.² Each participating district contributes the same data to the system, allowing districts to compare themselves to others across the state and identify schools and districts from whom they may wish to learn. In total, CORE maintains data for approximately three million students as of Fall 2019.

CORE's work has resulted in lessons learned that should inform state leaders and administrators; Cradle-to-Career Data System Workgroup³ members, advisors and facilitators; advocates; and other stakeholders as they plan the development of the new Cradle-to-Career data system and as they seek to make data useful.

¹ Senate Bill 75, 2019-20, SEC. 14. Chapter 8.5 California Cradle-to-Career Data System Act

² The eight CORE districts are Fresno, Garden Grove, Long Beach, Los Angeles, Oakland, Sacramento, San Francisco, and Santa Ana Unified. Counties participating in the CORE Data Collaborative include Riverside, Sacramento, Tulare, Ventura, El Dorado, Monterey, San Diego, Placer, Los Angeles and Sonoma.

³ Workgroup members are listed here: <https://cadatasystem.wested.org/group-member-biographies/workgroup>

This brief identifies four lessons learned from CORE that should be informative to state policymakers. The first three lessons build off policy recommendations surfaced by the *Getting Down to Facts II* (GDTFII) report, “Using Data for Improvement: Learning from the CORE Data Collaborative.”⁴ The fourth lesson speaks to ways in which CORE’s distinct data collection and measurement tools can directly benefit schools and local education agencies, as part of the data and continuous improvement systems being built by the state. These four lessons are:

1. Schools and districts need tools that allow them to make use of longitudinal data;
2. Educators and administrators need high-quality professional learning opportunities in order to make use of data for improvement;
3. Statewide data systems should integrate with or seamlessly complement local systems so that interim or real-time data can be used to support improvement; and
4. The existence of CORE’s improvement analytics and data infrastructure offers California an unprecedented path forward in creating a data system that not only holds educators accountable but that also gives them the timely information they need to continuously improve.

We discuss each of these lessons learned below. For each, we offer concrete recommendations for state policymakers, administrators, and others working to build a state-level longitudinal data system that can meaningfully support educational improvement and student outcomes. Many of our recommendations align with legislative intent and the elements of the reports that the State Office of Planning and Research and its contracted facilitators are expected to produce in 2020 and 2021.⁵ Where such alignment exists, we note it.

Lesson #1: Schools and districts need tools that allow them to make use of longitudinal data.

CORE’s data system draws primarily upon data already collected and reported to CALPADS. However, the GDTFII study finds that “CORE makes this data system more valuable and user-friendly by creating better data displays, calculating innovative metrics, and adding new data sources...”

District and school administrators who use CORE’s system regularly point to these reports as the tools that allow them to make meaning out of the data. These reports were developed over time through multiple iterations with end-users, and the set of tools continues to evolve and grow as end-users provide feedback and identify new questions and areas for deeper inquiry. With these reports, administrators are able to better understand strengths and opportunities for growth, begin to investigate root causes, and identify schools and districts from whom they wish to learn. Districts also learn from one another. As district administrators find new ways to use and glean insights from existing tools or innovate new ones, they share their learnings with one another.

⁴ Hough, H., Byun, E., Mulfinger, L. (2018). *Getting Down to Facts II: Working Toward K-12 Using Data for Improvement: Learning from the CORE Data Collaborative*. Palo Alto: Policy Analysis for California Education.

⁵ Per Education Code 10852-10857

The learning here is that a data system, on its own, is not sufficient to instigate action. User-friendly tools that inspire investigation and that support effective communication must be layered on top of the data system. Further, those tools should be shared by users across systems so that they can learn from one another and hold each other accountable for data use and data-supported action.

Implications for California’s Cradle-to-Career Data System

- ❑ When planning the data system, begin with the end in mind by identifying a few high-priority tools and reports that will be made available upon launch.
- ❑ Get feedback from end-users on what reports they may wish to see, and test these reports and tools with end-users in an iterative fashion.
- ❑ Look at CORE’s existing tools and reports and determine what could be replicated by the state. These may include CORE’s cross-district comparison reports, its ninth grade on-track reports, and others.
- ❑ Create opportunities for users to exchange learnings and ideas related to these tools, and allow user feedback and evolving user needs to inform future modifications to these tools.

These recommendations align with legislative intent:

- *10852 (c) Serve students and families by... (2) Creating direct support tools for teachers, parents, advisors, and students.*

These recommendations align with the state’s required reporting element:

- *10857 (16) How to create a public-facing interface to share information with the public that can help inform decisions.*

Lesson #2: Educators and administrators need high-quality professional learning opportunities in order to make use of data for improvement.

In order to ensure that data supports learning and action, CORE pairs data and analytic tools with intensive opportunities for professional learning and collaboration. CORE was founded on the concept that by networking and learning with one another, districts could improve outcomes in areas of shared priority or challenge.⁶ This concept extended to the CORE Data Collaborative and now includes leaders and educators at the school site level.

CORE offers participating districts and schools a number of professional learning opportunities that build their capacity and create the time and space for them to analyze data, reflect upon their current practices, and use insights to improve outcomes for students. These include trainings on the data system and the tools themselves, and most importantly, opportunities to participate in improvement

⁶ Knudson, J. & Garibaldi, M. (2015). [None of Us Are As Good As All of Us: Early Lessons From the CORE Districts](#). San Mateo: American Institutes for Research.

networks. CORE is wrapping up its flagship improvement community focused on math achievement for African-American and Latinx students⁷ and now is focused significantly on its Breakthrough Success Community (BTSC).⁸

The BTSC support educators in CORE high schools to improve ninth grade success among students who are historically least well served. With facilitation and coaching provided by CORE, teams of educators reflect upon current and historical data, use predictive analytics to understand signals that a student is on track for college and career readiness, and work to modify the ninth grade academic and non-academic experience. Researchers have found that coaching and Professional Learning Communities (PLCs) play a critical role in helping educators use data to improve their instruction.⁹

CORE has learned that these collaborations with educators must be sustained over time. “One and done” workshops are insufficient to turn data into insight, and insight into action. Often, teams of educators require time to become comfortable working with one another, require time and support to become comfortable interpreting data, and need time to develop, implement, test, and revise their practices in response to what the data is telling them.

Implications for California’s Cradle-to-Career Data System

- ❑ Create an implementation plan with substantial time and resources for training, capacity building, and the development of modules to support local data use.
- ❑ Combine workshops and data trainings with more intensive, sustained professional learning opportunities like PLCs.

These recommendations align with legislative intent:

- 10852 (c) *Serve students and families by doing all of the following:*
 - (1) *Identifying and tracking predictive indicators to enable parents, teachers, health and human services providers, and policymakers to provide appropriate interventions and supports to address disparities in opportunities and improve outcomes for all students.*
 - (2) *Creating direct support tools for teachers, parents, advisors, and students.*

These recommendations align with the state’s required reporting element:

- 10857 (5) *Plans for training and support of users.*

⁷ Documented by Nayfack, M., Park, V., Hough, H. & Willis, L. (2017). [Building Systems Knowledge for Continuous Improvement: Early lessons from the CORE districts](#). Palo Alto: Policy Analysis for California Education.

⁸ More information about CORE’s Breakthrough Success Community can be found here: <https://coredistricts.org/our-work/improvement-communities/break-through-success-community-2/>

⁹ Marsh, J., Bertrand, M., Huguette, A. (2015). [Using Data to Alter Instructional Practice: The Mediating Role of Coaches and Professional Learning Communities](#). Teachers College Record Volume 117 Number 4, 2015, p. 1-40.

Lesson #3: Statewide data systems should integrate with or seamlessly complement local systems, so that interim or real-time data can be used to support improvement.

The GDTFII report, as well as several other reports on data for continuous improvement make clear: districts need more timely local data than usually can be found in a state longitudinal data system, whether that is CORE's or one built by the state.¹⁰ While those systems are valuable, they must be augmented by systems that provide access to regularly updated data. In order to engage in regular inquiry cycles and to make improvements in real time, educators and administrators need daily, weekly, and/or monthly reports on attendance, office referrals, formative assessments, and other indicators that matter to them in their local context.

To support connections to local data, CORE is currently building connections to school and district Student Information Systems through Ed-Fi's common data interoperability standards and a secure process to create, read, and update data onto a shared data system. Ed-Fi (<https://www.ed-fi.org>) is a free open-source technology that includes a common data dictionary and mapping tools that allow local data systems to speak to each other. CORE is also working toward bringing local assessment and other data into our Ed-Fi-based system. During SY 2019-20, local educational agencies involved in this early phase work will have regularly updating dashboards on a few key focal areas such as attendance and "on trackness" that support local improvement efforts by giving educators easy access to data analytics at the district, school, grade, classroom and student levels.

Implications for California's Cradle-to-Career Data System

- ❑ Collaborate with providers of real-time data systems to ensure that the longitudinal data system and tools built by California are compatible with local systems, so that locally captured data will more seamlessly relate to and connect with data captured by the Cradle-to-Career Data System.
- ❑ The GDTFII report recommends that California join the Ed-Fi Data Standards. The state could go even further by setting a goal for all LEAs in the state to use the standards. It could also explicitly encourage or require major data service providers operating in the state (including those offering Student Information Systems and assessment systems) to use the Ed-Fi Data Standards. These moves could allow LEAs to consolidate and efficiently access their data via Ed-Fi's application programming interface (APIs), empowering them to use real-time data for decision-making and improvement purposes.
- ❑ Capture and share stories of how data from statewide sources has been effectively integrated with local data systems in ways that support continuous improvement.

These recommendations align with legislative intent:

¹⁰ For example, Hough, H., Willis, J., Grunow, A., Krausen, K., Kwon, S., Mulfinger, L. S., & Park, S. (2017). [Continuous improvement in practice](#). Palo Alto: Policy Analysis for California Education.

- 10852 (b) *Design a data system that minimizes the need for new infrastructure, is adaptable, and is flexible to meet future needs.*
- 10852 (d) *Improve the quality and reliability of data reported, and ensure consistency of key data definitions.*

These recommendations align with the state's required reporting elements:

- 10857 (2) *A means of developing common data definitions and required reporting element*
- 10857 (3) *Additional data elements necessary for partner entities to collect for future linkage to the data system.*
- 10857 (8) *How to ensure data quality from each component of the education system and participating entities.*
- 10857 (10) *How to connect data in a manner that limits the number of memoranda of understanding necessary and maximizes efficiencies.*

Lesson #4: The existence of CORE's improvement analytics and data infrastructure offers California an unprecedented path forward in creating a data system that not only holds educators accountable but that also gives them the timely information they need to continuously improve.

Created under a 2013 federal education waiver that fulfilled districts' need for better data and stronger accountability than California's law required at the time, the CORE data and analytics infrastructure goes deeper and broader than today's California School Dashboard can. To inform equity-driven decision making, thousands of educators access improvement data and analytics through CORE's Data Collaborative, which is currently separate from the state's systems for reporting data and holding leaders and educators accountable.

CORE's growing data infrastructure empowers schools and districts to practice continuous improvement, and as such, CORE plays a unique role in the state. CORE's data and analytics are critical components of the Statewide [System of Support](#), giving the state a complementary district-created system that supports statewide goals while equipping districts to learn from each other. The CORE system removes barriers to data and analysis that have historically prevented improvement efforts from being sustainable and transferable.

The potential coupling of state and local data and analytics infrastructures is an incredible opportunity for California's school systems. CORE's data system was born of a unique collaboration and at a [singular moment in time](#). While it would be nearly impossible for a similar collaboration to emerge today, the state can take advantage of the experiences CORE offers and can formally weave CORE's local infrastructure into the new Cradle-to-Career system and the System of Support.

CORE is a data innovator in California, with participating districts piloting forward-thinking new improvement measures and analytics in a safe and supportive environment. An incubator like CORE is needed, as the state's charge is quite different. State education agencies' data dashboards contain indicators that must hold up to the rigors of more traditional, high-stakes accountability. A CORE-State partnership could make sense, with CORE incubating and testing new indicators and analytics for continuous improvement, and the state scaling these when the timing is right.

Particularly relevant to the Cradle-to-Career Data System at this stage given, its focus on high school-to-college connections, is CORE's predictive analytics that span grades four to twelve. CORE now uses predictive modeling to inform 8th grade on-track and 9th grade on-track, checklist-style indicators, and it is actively working toward equipping schools with 10th, 11th, and 12th grade on-track indicators to improve student trajectories. At the same time, CORE is making strides regionally to build kindergarten-to-career data systems with K-12 data, National Student Clearinghouse (NSC) data, and some California community college data.

Implications for California's Cradle-to-Career Data System

- ❑ Look at and learn from CORE's 9th grade on-track indicator, or use it as a model for a similar statewide indicator. Because the Cradle-to-Career Data System intends to connect high school to postsecondary student records, the state is positioned to offer every community powerful on-track information. The state could either replicate CORE's indicator, or perhaps more efficiently, could partner with CORE to scale its indicator to every LEA in the state.
- ❑ Add NSC data to the Cradle-to-Career Data System. Although this is not required by the legislation, it would ensure that indicators and insights could be based on all postsecondary enrollments, not just those taking place at California Community College, University of California, and California State University campuses.
- ❑ Explicitly encourage or incentivize districts to opt into the CORE Data Collaborative in order to help them engage in root cause analysis and continuous improvement, as envisioned by the Statewide System of Supports.

These recommendations align with legislative intent:

- 10852 (c) *Serve students and families by doing all of the following:*
 - (1) *Identifying and tracking predictive indicators to enable parents, teachers, health and human services providers, and policymakers to provide appropriate interventions and supports to address disparities in opportunities and improve outcomes for all students.*
 - (2) *Creating direct support tools for teachers, parents, advisors, and students.*
 - (4) *Advancing academic and governmental research on improving policies from birth through career.*
- 10852 (e) *Identify additional data points and metrics that can be developed and integrated into the data system...*

These recommendations align with the state's required reporting element:

- *10857 (3) Additional data elements necessary for partner entities to collect for future linkage to the data system.*

Acknowledgment

This brief was created by CORE Districts in collaboration with Carrie Hahnel, an independent consultant and researcher. Carrie's work focuses on education policy, including accountability, data systems, school finance, and strategies for mitigating racial and socioeconomic inequities.

About CORE

The CORE Districts were established in 2010, when Los Angeles, Long Beach, Fresno, Garden Grove, Santa Ana, Sacramento, Oakland and San Francisco collaborated with the State of California in an unprecedented attempt to secure federal funding under Race to the Top. Although the state's grant application was denied, the districts' collaboration led to them eventually becoming the only local educational agencies in the nation to secure a federal No Child Left Behind waiver. From 2013 to 2016 under the waiver, the districts established a shared data system; held themselves publicly accountable for reporting school progress across multiple academic and non-academic indicators; identified and supported schools in need of assistance; and shared success across districts. Their ongoing work to [share data](#) and to develop [network strategies](#) so that schools and districts can learn from each other is nationally recognized.