

Addressing California's Data Needs: Implementing Comprehensive, Longitudinal Systems at the Local and State Levels

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Topics covered: Data systems

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Statement of the Problem

In the past decade California has made significant strides towards making important and relevant school and district data available to educators and the public. Databases, such as the California Basic Education Data System (CBEDS) and student achievement data sets (including average test scores, API, AYP, Program Improvement status) are publicly accessible and provide important information on school performance, teacher and student demographics, and subgroup performance.

Despite these efforts, the state still falls short of a comprehensive and easily accessed system with longitudinally-linked student-level data. Schools, districts, and the state are unable to track the progress of students over time, link that progress to program participation or teachers, or accurately determine key benchmarks such as dropout, graduation, or student mobility rates. We are also unable to track the progress and/or success of students who graduate from high school, leave high school early, transfer to other schools or districts, or attend post-secondary institutions.

As a result, our evaluation and accountability measures, both at the local and the state levels, are severely hampered. Without an effective student tracking system, we as superintendents and administrators of California districts are significantly limited in our ability to determine the effectiveness of local policies, programs, and practices aimed at improving student learning and attainment. Without significant investment in our own local data systems, it is difficult to accurately monitor individual students' progress prior to and after implementation of new programs and policies, to look at effects of initiatives on subgroups of data, or to obtain needed information for diagnosing and addressing individual student needs. This hinders the productivity of schools and districts by limiting the ability of educators to make evidence-based decisions about instructional practice and policy.

Similar limitations exist at the state level. The lack of a strong state data system weakens our ability to conduct robust evaluations of important state initiatives such as the Quality Education Investment Act (QEIA). With respect to accountability, school progress at this point must be assessed based on improvement from one cohort of students to another, rather than on growth of individual students across years. This method of tracking progress is especially problematic in a state like California with high mobility rates. In addition, because longitudinally-linked student data are not available, the state has been unable to apply to the federal government to establish a growth model for Adequate Yearly Progress (AYP). On a very fundamental basis the ability of the state to determine the effectiveness of policies and initiatives is severely compromised.

Unfortunately, state efforts to put a comprehensive data system in place seem to have been a casualty of political struggles, usually around budget priorities. SB 1453 authorized the California Longitudinal Pupil Achievement Data System (CALPADS) in 2002, but to date funding for the system has not been anywhere near the level necessary for full implementation.¹ For CALPADS to be successful, districts must establish a sound infrastructure to ensure that high quality data are collected and entered into the system. This infrastructure would primarily be a one-time investment, yet the necessary funds for this investment have not been allocated. In addition, for the system to realize its potential contribution to evidence-based decision-making, it must track a sufficient range of data on both educational outcomes (such as California Standards Test (CST) scores, graduation, etc.) and educational inputs (program participation, teacher qualifications, etc.). Yet the data to be included in CALPADS have been limited to only those variables required by No Child Left Behind (NCLB), apparently due to fears that requiring additional information would generate district demands for more state funding to modify and expand local data systems. Thus, even if fully funded, the data system currently envisioned would remain focused on trailing indicators (such as the AYP and API scores) rather than also including variables (leading indicators) that might help predict or explain patterns in student achievement. We believe that if we are to raise the overall level of achievement and close the achievement gap in this state, we must identify and track the leading indicators that are likely to predict improvements in student performance.

In addition to the limitations in California's statewide data systems, we are also concerned about the limited capacity of many of our state's districts and schools to generate, analyze, and use data for instructional improvement. Districts and schools require data at a fine-grained level, collected at frequent intervals, to inform their instructional practices and policies. These data include scores on benchmark assessments, information on course enrollment and classroom assignments, student grades, and student supports, among others. Some of these variables would be unnecessary and overly cumbersome in a state data system, so districts must find ways to collect, store, and analyze them on their own. Since districts typically do not have the internal capacity needed to do so, we often work with vendors who can set up systems for data collection and analysis. However, accurate and sufficient information necessary for us to choose appropriate and reliable vendors is not readily available. Companies often over-promise on data systems for districts, and dollars and time are wasted on unsuitable or low-quality systems as a result. Furthermore the systems that are developed locally often are incompatible with the state system or higher education data systems, preventing the merging of data sets needed for important analyses. This lack of compatibility also hinders districts

¹ For the 2006-07 budget, the CDE and LAO requested \$15 million to support districts' maintenance of the student identifier system and for other data quality improvements. The allocation of these funds was later withdrawn from the budget. See Hansen (2007).

from sharing necessary information when students change locale. We believe there is a state role for facilitating more effective data systems at the local level.

Policy Recommendations

The following policy recommendations address the need (as described above) for improved systems that will make necessary data available and accessible to districts, schools, and teachers, and will facilitate improved monitoring and accountability by the state, as well as local entities.

➤ **Implement and fully fund a comprehensive, longitudinal state data system**

First, we recommend that the state fully implement the comprehensive longitudinal data system (CALPADS) that will enable districts and schools to examine individual students' performance over time. We must identify and take specific steps to break the gridlock that is preventing the implementation of this system, and the state must appropriate sufficient funds to initiate and maintain high quality implementation. Without an initial investment to ensure that this system is comprehensive, accessible, and easy to use, it will always fall short of meeting the data needs of the state.

In addition, the state should provide the funding necessary for districts to implement and contribute to this system, at least during the initial start-up period when new data collections and systems must be established at the local level. Any data system is only useful to the extent that the data it contains are accurate and complete; the quality and usefulness of our statewide system should not be dependent on the uneven capacity and will at the local level.

To address the needs outlined above, this system must include the following:

- A required unique identifier for each student in California. While this identifier currently exists, an effective system for using this identifier has not been established. Use of this identifier should be required of all publicly funded schools, including charters, in the pre-K-12 system. Full use of the identifier will enable the tracking of student progress over time, even if the student moves to a new school or district. This identifier will help districts to calculate dropout and graduation rates more accurately as well as student and teacher mobility.
- The use of this unique identifier should also be required at all publicly funded institutions of higher education (IHEs) (including community colleges, California State universities, and the University of California). Ultimately the goal of the pre-K-12 system is to prepare students for success in college and/or careers, and beyond. Without the ability to track students into and through higher education institutions, the ability for the state and districts to assess their success towards this goal is limited.
- A comprehensive review of the variables to be included in this system should be completed by the state. Decisions on what variables to include (including leading indicators) should be based on the data needs of local districts and the state, and not for political or financial reasons. At the minimum, the state data system should include individual students' test scores (STAR, CAHSEE, CELDT, etc.), dropout and graduation status, student demographic information, program participation (e.g., special education, vocational education), as well as linkages between students' and teachers' data.

To ensure that such a system is used appropriately and to its full potential, the state must also find ways to make the data accessible to educators and researchers while maintaining student privacy. Educators should have access to individual students' records of performance and teacher assignments for students in their jurisdiction in order to plan instructional programs. In addition, educators should be trained how to access and use these data effectively.

Such a comprehensive and fine-grained student-level dataset would enable more effective evaluation of statewide educational programs and policies. The growth of individual students across years could be used to measure school progress and contribution to student learning, rather than simply changes from one cohort of students to another. In addition, by linking students to teachers, and tracking teachers over time, the state could further evaluate the effects of programs and policies for teachers (e.g., professional development programs) on student achievement and could examine additional indicators like teacher mobility. Finally, the presence of such a system would enable California to further explore options with the federal government that would allow the use of a growth model for AYP in California, though such a system may also require changes in the CST such that scores are vertically equated across grades.

Such a system would also further enable local districts and schools to make evidence-based decisions about programs and policies to improve instruction. Educators could follow students over time, examine past performance of students who attended other schools or districts in California, and follow students beyond the K-12 system to determine how successfully they prepared students for post-secondary programs. Districts and schools could better identify shortcomings in curriculum, improve the design of their instructional programs, and analyze programs to ensure they are effective.

➤ **Provide support to develop and refine local data systems**

While the state system outlined above will provide necessary data for the state and local jurisdictions to analyze the effectiveness of practices and policies, individual districts and schools need to utilize a broader set of data to track progress on specific district goals. More detailed and comprehensive data sets can help to ensure districts and schools are meeting the range of their students' needs and are adjusting instructional programs accordingly. Thus, we also recommend that the state take measures to support regional and local efforts to develop local data systems that are customized to their needs, coordinated with the state system, and linked to post-secondary information. Specifically, we recommend:

- Vendor quality: The state should play a supportive role in helping districts identify vendors for local data systems that can articulate with one another and with the state system. For example, the state could compile a "Consumer Reports" style summary of various software systems available for district and school use, based on an independent review. Data that would be useful to districts in such local systems include (in addition to student performance data) information on intervention and remediation efforts, access to rigorous academic courses, use of particular teaching practices for English learners, professional development initiatives, social services provided to students, etc. These data could be used to determine the effectiveness of particular programs and instructional practices, as well as to identify specific needs of students.

- State and local system compatibility: The state should provide guidelines to ensure that data vendors create systems that are compatible with the statewide CALPADS system. In other words, districts should have the capacity to merge data from their local systems with data from the statewide system, IHEs, and other districts (for example, if students transfer into a district from elsewhere in the state).
- Post-secondary information: Currently, many districts pay a clearinghouse to obtain relevant information from IHEs. The state should consider partnering with other state-funded post-secondary education institutions such as the CSUs and community colleges as a part of the pre-K-16 system to enable the sharing of these data across all levels for purposes of instructional improvement and evaluation of educational initiatives.
- Leading indicators: The state should commission a study that will recommend leading indicators that could be carefully tracked by local districts to determine which systems, structures, and processes are most likely to impact the quality of instructional practice

We believe these recommendations address the primary data concerns and issues raised in the Getting Down to Facts reports. Significant evidence indicates that the use of data to inform instruction is an important strategy to address student needs and improve student learning. In addition, accurate and timely data are an essential component of any effective results-based accountability system focused on improving student learning and achievement. Therefore, as part of a statewide, coherent and aligned system of governance, accountability, and finance in California, a comprehensive data system is key. We urge the state to move ahead with its plans to implement such a system. We also caution against taking shortcuts in terms of funding and comprehensiveness. A strong one-time investment that addresses the data needs now and into the future will avoid additional challenges, limitations, and constraints down the road. Finally, to make the statewide system effective, it will be necessary for the state to provide the necessary supports for local districts to build their capacity to utilize the data and create customized systems to address local needs.

Summary of Evidence Supporting Recommendations

A growing body of research (Williams et al., 2005; Bitter et al., 2005) in California provides evidence that systematic analysis and use of data to inform instruction is a key factor for the improvement of student outcomes and achievement in high-poverty schools. In light of this evidence, we recommend in this brief that the state put systems in place to make data that can be used to inform instruction available and easily accessible to educators throughout the state.

The data systems we recommend are based on evidence from a combination of research and our own practice as educators and district leaders. As documented in the Getting Down to Facts studies, California is behind most states in its data approach and the quality of the educational data system (Hansen, 2007). California still has a “traditional approach” to data collection, with multiple and separate collections that primarily satisfy accountability and monitoring requirements. We concur with Hansen’s recommendation that California should look to the experiences of other states to develop data systems that can be used for “robust, integrated analyses” to inform policy and program development and implementation. A comprehensive, longitudinal system as recommended in this brief would move us in the right direction.

Researchers have also identified little support among California’s state leaders for developing an education data system. As mentioned above, in 2006 the state Legislature denied the level of funding

recommended for districts to maintain the new student identifier system, something noted as critical to tracking longitudinal student progress within the K-16 education system (Hansen, 2007). In addition, other constituencies have restricted the variables to be included in the system to those required by NCLB. We believe that it is critical for state leadership to overcome these hurdles and to focus on developing a “culture of data” (Hansen, 2007) in order to focus on the connection between quality data and school and district improvement efforts.

Finally, California’s focus on compliance with federal and state testing and accountability has largely driven the existing state data system, but it has not supported *district* data needs (Springboard Schools, 2007). Districts must be able to link the effectiveness of particular strategies and practices to improvements in instructional practice and student achievement. While researchers have noted some recent promising changes, we believe it is critical for the state to fully fund and support a comprehensive longitudinal data system as well as support local efforts to collect, analyze, and use data to inform instruction.

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