



POLICY BRIEF

AUGUST 2008

Learning What Works: Continuous Improvement in California's Education System

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Policy Brief 08-4

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Californians expect a lot from their educational system. The state has set high standards for student learning, and we expect our schools to ensure that all children meet those standards. The continued health of California's economy requires a steadily increasing supply of highly educated and highly skilled workers, and we look to our schools to prepare them.

Sadly, the current performance of California's schools falls short of public expectations. The academic achievement of many students does not meet state standards, and many young people leave school without the knowledge and skills needed to contribute to California's constantly changing economy.

Executive Summary

What will it take to bring about dramatic improvements in the performance of California's education system? The fact is, we don't know. California does not now collect the kind of educational data that would allow us to accurately measure the performance of schools and students, or to evaluate the effectiveness of different educational policies and practices. We design and implement policies in ways that make it difficult or impossible to identify whether new approaches improve performance or increase learning.

In this report we argue that to raise student performance and satisfy public expectations, California's education system must be transformed into a continuously improving system that encourages innovation, carefully measures the effectiveness of different policies and practices, and—most importantly—learns from experience.

The essential features of a continuously improving system include:

- clear and specific goals
- timely, reliable information
- strong capacity
- decision-making flexibility
- aligned incentives

The key to change is the commitment to learning how to do things better, and to continuously improve the performance of our schools and of the children under their care. Reorganizing the education system to support continuous improvement will make it possible for California to keep its promises to students, and help to ensure the continued prosperity of our state.

What will it take to bring about dramatic improvements in the performance of California's education system? The fact is, we don't know. California does not now collect the kind of educational data that would allow us to accurately measure the performance of schools and students, or to evaluate the effectiveness of different educational policies and practices. We design and implement policies in ways that make it difficult or impossible to identify whether new approaches improve performance or increase learning. Ensuring academic success for all students consequently remains a distant goal, and we lack a clear roadmap to achieve it.

As the authors of the "Getting Down to Facts" (GDTF) studies and the Governor's Committee on Education Excellence (GCEE) have concluded, simply investing more resources in California's present education system will not produce the level of improvement that a prosperous future for our state demands.¹ In this report we argue that to raise student performance and satisfy public expectations, California's education system must be transformed into a continuously improving system that encourages innovation, carefully measures the effectiveness of different policies and practices, and—most importantly—learns from experience.

In the sections that follow we offer a sketch of what continuous improvement would look like at various levels of California's education system,

along with ideas about how to move our present system toward this goal. We discuss the essential features of a continuously improving system, including:

- clear and specific goals
- timely, reliable information
- strong capacity
- decision-making flexibility
- aligned incentives

All of these features are important, but the key to change is the commitment to learn how to do things better, and to continuously improve the performance of our schools and of the children under their care.

How a Continuously Improving System Fosters Learning

Building an education system committed to continuous improvement will oblige us to acknowledge what we don't know, and to commit ourselves to learn more about what works for specific schools and students. Creating conditions for learning will in turn demand an increased willingness to experiment with new and alternative approaches in schools and classrooms. Trying these out in different settings and subjecting them to careful evaluation will make it possible to identify programs and practices that are successful in raising student achievement, and to encourage their adoption in other schools and classrooms.

This is not the way California's education system works now. First, we need to abandon the false confidence that we already know what to do: "Reduce class size." "Pay teachers for performance." "Increase spending." If we already knew what works best for students, then all that would be required would be the faithful implementation of proven practice. In fact we still have a lot to learn about how to increase performance or reduce achievement gaps. There are no silver bullets.

Second, we need to adopt a more thoughtful and deliberate approach to policy implementation—one that facilitates learning. One way to do this would be to design and implement quasi-experiments, in which new policies and practices are adopted in a carefully selected sample of schools and classrooms. This would allow us to identify whether and under what circumstances new approaches result in better outcomes for students.

In the case of California's class-size reduction (CSR) initiative, for example, reducing class size in some schools and not others would have permitted the state to assess the learning gains that resulted from smaller classes, and to evaluate the cost of CSR relative to other policy changes. Instead, the Legislature required districts to reduce class-size in all schools simultaneously, and an opportunity to learn was lost.

Third, we need to subject alternative policies and practices to careful evaluation. In light of the distance between current levels of performance and the state's goals, the need to invest in learning what policies and practices are effective in improving performance—and under what circumstances—is critically important. Our failure to evaluate innovations in the education system not only prevents us from learning what's working and what's not, but may in fact cause us to abandon programs that *are* working for lack of evidence on their effects.

Insofar as new programs are evaluated at all, evaluation is often conducted when programs are fully in place and it is too late to change course. The results of these evaluations are often ambiguous, because the “treatment” is applied simultaneously in all school districts, because implementation is uneven across schools, and because essential baseline data are rarely if ever collected prior to implementation.

Building evaluation into program design from the beginning, and monitoring program performance over the course of implementation would permit mid-course corrections based on new knowledge about what's working and what's not, and would help to identify the circumstances under which new programs are effective. Over time this would allow policymakers to identify successful innovations worthy of

continued support, and to withdraw support from programs that have not proven effective. It would also provide information that local educators could use to identify programs and practices that they might wish to adopt in their own schools.

A continuously improving system would display significantly greater tolerance for risk and experimentation than is common in California's current educational system. In education as in industry, some innovations work but many will not, and the system needs to be flexible enough to support and learn from occasional failures in the search for more effective approaches. A commitment to base decisions on information would also require the state to give schools and districts sufficient flexibility to encourage the further adaptation of innovations, in order to tailor them to local circumstances and support further learning. New practices that work in one school may well promise improved performance in other schools, but only if they are adapted to the needs and capabilities of each school.

Finally, a continuously improving system would include institutions to support educators in their efforts to share information about promising policies and practices across schools and districts. At present California provides few opportunities for educators to learn from each other, and as a result new knowledge is seldom available

outside the school or district where it was first acquired. Establishing strategies that allow schools and districts to share information and learn not only from their own experience but also from the experiences of others is one of the key features of a continuously improving education system.

Key Features of a Continuously Improving System

In a continuously improving educational system goals must be clear and specific, so that participants have a common vision of what they are trying to accomplish and can align their policies and practices to support success. Stakeholders must have access to timely, reliable information so they can understand the current performance of the system and make informed decisions about the effectiveness of alternative policies and practices. Educators at all levels must have the knowledge, skill, and time to make use of available information in order to optimize educational opportunities for students. Schools and school districts must have the flexibility they require to meet the diverse needs of California's students and foster innovation so that schools can continually improve. And incentives at all levels must be aligned so that everyone in the system (students, teachers,

administrators, and policymakers) works together to achieve system goals. (See Figure 1.)

A. Establish Clear and Specific Goals

Clear and specific goals are the foundation of a continuously improving educational system. Without a clear statement of goals it is impossible to align policies and practices to achieve success. But with clearly articulated goals it becomes possible to design interventions, structure incentives, and evaluate the effectiveness of programs and practices. Choosing goals and

designing standards is an ongoing process, as the needs of the economy and the interests and priorities of citizens may change over time.

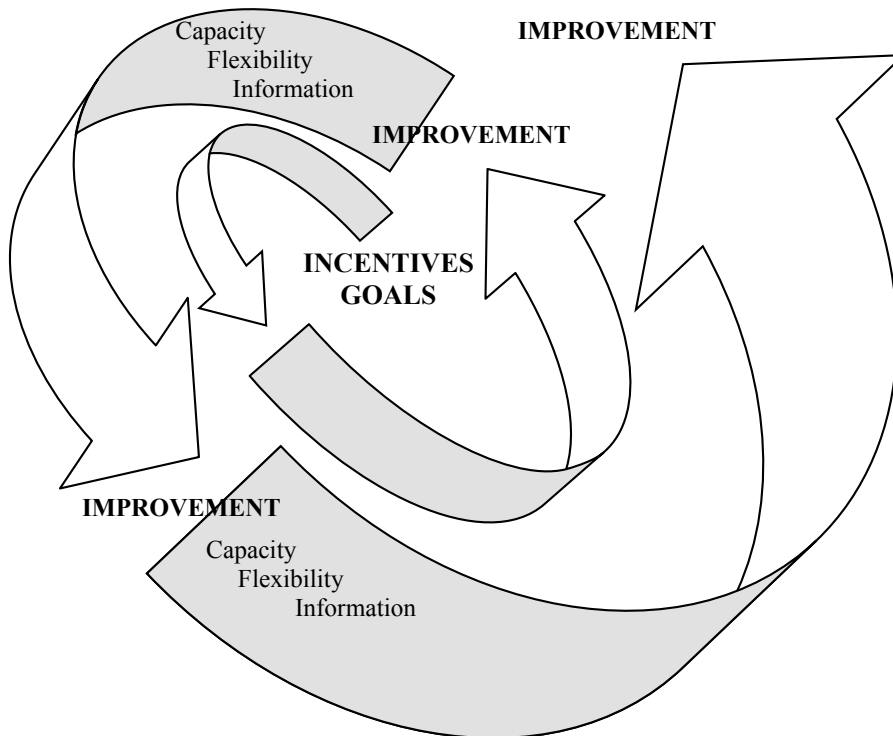
California has invested a great deal of effort in defining clear, specific standards for the state’s educational system. Our ambitious grade-level standards set forth a clear statement of what students are expected to know and be able to do as they move through school, and the accompanying curriculum frameworks provide guidance for educators as they work to ensure that all students meet the standards. According to the Fordham

Foundation, California is one of only three states with rigorous, coherent standards in all subject areas.² The key challenge in California today is to align educational policy and practice more closely with the state’s standards.

While it is essential to set rigorous, coherent standards for schools and students, we expect our schools to do many other things that are not reflected in the state’s grade-level standards. We expect them to keep young people healthy and safe, and to keep them in school through high school graduation. We also expect them to prepare young people for engaged citizenship, introduce them to art and music, and to provide them with the skills and habits they need for productive employment.

Experience tells us that people work toward goals that are measured, often forsaking unmeasured goals. So, for instance, if we do not know what high school graduation rates are or what factors are causing students to drop out of school, we will not know whether we need to put more effort into addressing those things. A first step toward aligning education policies and practices toward shared goals is accurately measuring progress towards all of the goals that we expect our schools to accomplish.

FIGURE 1. The Process of Continuous improvement



B. Provide Timely, Reliable Information

Stakeholders at all levels of the education system also need timely and reliable information in order to measure progress towards goals, and to inform their choices among alternative policies, programs, and practices. For California to make good use of information to support continuous improvement, the state government and each school district must:

- develop a detailed and reliable data system;
- make data easily available to a broad range of education stakeholders;
- implement policies and practices in ways that allow us to learn whether or not they are working; and
- develop networks and other infrastructures for information sharing.

Develop a Detailed, Reliable Data System

A strong data system that produces rich and timely information on students, classrooms, and schools is essential to support continuous educational improvement. Without good data the public, educators, and policymakers cannot find good answers to even the simplest questions about how students are doing and whether different educational reforms are accomplishing their goals. For example, today in California we cannot answer even basic questions such as how much mathematics students are learning each year, or how many times a given student has been taught by an out-of-field teacher. We also cannot answer

causal questions about the effects on students of programs, teachers, or schools. For instance, what are the most effective teacher professional development programs in the state, or what kinds of instructional programs are most effective in helping English language learners reach proficiency?

Currently we collect quite a bit of information on students, teachers, and schools; however, in many cases, information from different sources or dates cannot be linked. For example, we cannot link information on teachers to the students they teach, and we cannot link information we have collected on individual students over time to measure learning over their academic career. This makes it difficult to describe the current state of education, or to assess the effects of educational programs and practices.

The data that California now collects would also be far more useful if they were linked up and down the system from preschools to postsecondary education, and if they were linked across agencies to include medical, social welfare, corrections, and employment offices. Linking multiple data systems would provide educators with more comprehensive information on the needs of their students, and also allow us to track the impact of educational resources and programs into the adult lives of students. The integration of a variety of state data systems is already well advanced in Florida and some other states, but it remains a distant goal in California. We describe the basic design of a strong data system

in another PACE policy brief, *Building an Information System to Support Continuous Improvement in California Public Schools*.³

Make Data Easily Available

An effective data system must be structured and organized in ways that ensure that timely and useful data are available to educators at all levels of the system, and in formats that can help to inform their decisions about the education of the children under their care. For example, schools and school districts need data that enable them to evaluate the impacts of new programs and practices on student outcomes, including achievement, attendance, and high school completion. Teachers need data on the performance of the students in their classes at the beginning of the school year—when information about students' strengths and weaknesses might enable them to adapt their instruction to students' needs—and not at the end of the year when these students are about to become someone else's responsibility.

Parents need information on the schools where their children are enrolled before the school year begins, when they are still in a position to make decisions about the schools they would like their children to attend. Typically such information has only become available in the middle of the year, when children are already deeply enmeshed in relationships and activities. Taxpayers, voters, and the public in general need information on funds flowing to schools and districts,

How Not to Learn: The Quality Education Improvement Act (QEIA)

One very clear illustration of why California's education system does not support continuous improvement is provided by the implementation of the Quality Education Improvement Act, or QEIA. The legislation establishing QEIA appropriated \$2.7 billion over 7 years to support school improvement efforts in a relatively small number of low-performing schools.

The implementation of QEIA presented a unique opportunity to learn what kinds of interventions are effective in turning around low-performing schools. Sadly, however, two major flaws in the design of the program mean that we will learn less than we might have about what works and what does not to improve the performance of California's neediest students.

First of all, QEIA prescribed the specific treatments to be implemented in most of the schools receiving QEIA funds, rather than encouraging schools to experiment with different strategies. The largest share of the money is to be devoted to class-size reduction (CSR). The political appeal of CSR is undeniable, and there is at least some evidence that it can have positive effects on student learning for younger students, but there are many other policy interventions available that might have even larger effects on student learning. Allowing schools to experiment with other strategies would have provided an opportunity to acquire new information about what works and what doesn't in California's most challenging schools.

Even with a prescribed "treatment," California might have learned something from QEIA if the design of the implementation had supported a careful evaluation. QEIA funds will be provided to only some of the schools that are eligible for assistance, with the "winners" selected by lottery. With random selection of participating schools, therefore, QEIA might have supported a quasi-experiment similar to those conducted in medicine, in which some eligible schools received the treatment (i.e., QEIA funds) while other eligible schools did not. Under these circumstances it would be possible to attribute changes in performance to the treatment, and to learn which policies and practices make a difference for student learning.

Unfortunately the assignment of schools to QEIA "treatment" was far from random. School districts were permitted to rank the schools within the district, in effect choosing which of their schools would receive QEIA funds and which would not. Therefore the schools that received support from QEIA may be very different from those that did not in a number of ways. For this reason, it is impossible to isolate the effects of the QEIA "treatment" from other potentially significant differences across schools.

A well-designed implementation of QEIA would have presented a significant investment in learning what kinds of innovations and interventions might improve the performance of California's many low-performing schools. Instead the state has simply poured an additional \$2.7 billion into the present system, with little hope that this vast expenditure will produce new knowledge that might guide subsequent reform efforts.

on the allocation of resources within these organizations, and on the effects of resources. Only with such information can they make informed decisions about how best to ensure academic success for California's students.

Link Evaluation to Policies and Programs

Even with great data and access, it will be difficult for Californians to learn which policies and programs are working unless those policies and programs are implemented in such a way as to facilitate evaluation. When programs are implemented in all classrooms and all schools at once, there is no group to compare program recipients to, making it impossible to assess whether they are better or worse off than they would have been without the change. Currently, not only is program implementation not designed to support evaluation, but plans for evaluation are rarely developed until well after the program has been adopted, making the results even less reliable. (See text box at left.)

One relatively simple and low-cost strategy for supporting continuous improvement and learning would be to design the implementation of new policies as quasi-experiments, in which innovations are introduced on a pilot basis into some schools and classrooms and not others. This would allow comparisons between sites where the innovation was in place and others where it was not, and provide opportunities to learn whether the innovation was having the expected impact on student learning.

Promote the Sharing of Data

Having good data systems and information is one thing; using them effectively to address the needs of students and the concerns of different stakeholders is quite another. Improvement driven by information requires a culture where people regularly share data and feel that it is useful in educational decision-making, whether they are teachers, administrators, or parents.

At present, lessons learned in one school or district typically are not shared with outside educators, because there are few channels through which new knowledge can be validated or diffused. Even when innovations are subjected to academic scrutiny, there are few institutionalized channels through which research-based information is likely to be communicated back to schools or school districts. Creating networks of schools and districts to support efforts by the state to integrate and disseminate information can reduce the effort needed for decision-makers—whether they be teachers, administrators, policymakers, or community members—to obtain the information they need to improve schools and expand opportunities for students. (See text box at right.)

C. Build Capacity to Use Educational Data

Information is essential to an education system committed to organizational learning and continuous improvement, but it will be of no use unless we have the human capacity to use the information wisely. Schools, districts,

How To Learn: Long Beach Unified School District

The Long Beach Unified School District (LBUSD) is nationally recognized for its systematic use of data to improve district operations and improve student achievement. The district's department of research plays a prominent role in collecting, analyzing, and distributing the results of various assessments. Furthermore, various members of the district leadership team meet with school leaders and teachers throughout the year in an effort to facilitate the use of assessment results to guide change at the school and classroom level. These meetings also provide an opportunity for teachers to provide suggestions on how to improve and change Long Beach's data system.

LBUSD's comprehensive approach to data use is evident in the district's new student data system, Academic Data Browser. The new inter/intranet accessible system provides lengthy and detailed information on all students in the district. Through Academic Data Browser, schools and teachers can access a variety of relevant data, including attendance, English fluency, course grades and exams, and scores on district and state assessments including STAR and CAHSEE results.

The availability and accessibility of student information helps schools in several ways. First, schools can identify the needs of students and place them in appropriate classes. Second, schools can identify larger trends and problems in student achievement, thereby focusing and tailoring instruction and interventions. With access to longitudinal data at the student level, teachers have the information they need to place individual student achievement within a broader context. For example, a school can identify all English Language students who have not passed the CAHSEE. Within classrooms, teachers can look more closely at their own students. For example, they can see how their students scored on the district assessment in language arts.

Another example of Long Beach's culture of data use is illustrated by the district's recent creation and implementation of a Saturday school program for English Learners. Designed to improve language skills and provide support for students across the curriculum, this program was created as a direct response to district and school frustration regarding a persistent achievement gap for English Learners. The district conducts regular analyses to gauge the effectiveness of the program, and these have identified several potential areas of weakness, including the need to focus more on student writing.

and even the California Department of Education (CDE) in Sacramento need sufficient resources including time and trained personnel to reflect on their work, to consider different ways of organizing and carrying out their responsibilities, and to provide support and guidance for others.

Capacity for evaluation and organizational learning has been undermined at all levels of California's education system, as growing demands for increased efficiency and accountability have steadily reduced the share of educational resources available for learning and support, and increased the share devoted to compliance with state and federal mandates. One significant cost has been a steady shift away from seemingly less immediately valuable management and support functions in schools, including mentoring, data use, peer learning, and evaluation. Spending more on the wrong things is no more efficient than spending less on the right things, and the failure to invest in organizational learning impedes educational improvement.

Improving the performance of schools and students also takes time: time to learn about alternative ways of working, time to observe others' work, time to give or receive guidance and advice, time to reflect on what's working and what's not. Without time, educators will inevitably continue to do what they have always done, or they will simply follow rules laid down by others. Neither of these will support continuous educational improvement. Time is especially scarce in California's educational system, where the ratio of adults

to children is among the lowest in the nation. Practically all of the adults in California's schools are fully engaged in keeping the present system functioning rather than identifying ways to make the system work better.

The California Department of Education (CDE) now devotes nearly all of its effort to complying with state and federal regulations, including the "No Child Left Behind" Act. It lacks the skilled personnel that would be required to support improvement in the performance of California schools and students—personnel who would rigorously evaluate the success and failure of alternative policies, and synthesize and disseminate information about the current state of California education and the effectiveness of various reforms.

Capacity is similarly lacking in schools and school districts, where the main responsibility for improving performance resides. Large gains in performance almost certainly require the employment of additional people, with different skills than those traditionally found in the principal's or superintendent's office. For example, the spotlight that federal education policy shines on low-performing schools may require school districts to hire employees who specialize in the complex and difficult task of turning such schools around. Meeting public expectations that schools demonstrate continuous improvement in student performance may require districts to hire experts in the development and evaluation of innovative programs. Rather than focusing their attention

on compliance with state and federal mandates, principals may need to devote themselves to monitoring teachers, and intervening in classrooms to introduce new instructional strategies and guide teachers as they put them into practice. To free principals' time for strategically important activities including teacher support and community relations, school districts may need to employ additional administrators to manage paperwork and other routine tasks or restructure the educational system to reduce bureaucratic burdens.

In classrooms, teachers not only need timely data on the past and current performance of their students; they also need the skill and knowledge to be able to interpret the data and determine what the data can tell them about practices that will be most effective for their students. Additional time for planning and collaboration, along with carefully designed and targeted professional development opportunities for teachers are needed to support the effective use of information in classrooms.

D. Increase Decision-Making Flexibility

Skilled individuals with clear goals and accurate information could greatly improve the educational experiences and outcomes of students, but only if they have the financial and programmatic flexibility to utilize their resources in the best ways they know how. The GDTF project showed that California is more concerned with regulation than with supporting innovation and experimentation. The

California Education Code includes more than 100,000 articles and more than 2,000 pages, governing everything from the election of school boards to the humane treatment of animals on school premises.

Perhaps the most striking evidence of the preference for regulation, however, is the proliferation of categorical funding programs in California's education system, under which the Legislature appropriates funds that can only be used for specific purposes. There are more than 100 such programs in California, which significantly limits the opportunity for local educators to experiment with alternative approaches or to reallocate resources to better meet the needs of their students. In the GDTE studies, principals and superintendents identified greater flexibility and increased freedom from compliance with state regulations as essential for the improved performance of their schools and districts.

California faces a dilemma as it seeks to improve the performance of the state's schools. State administrators face incentives that encourage them to provide ever-tighter regulation because they don't trust local educators to make good use of new authority and resources. Local educators, in turn, face incentives that discourage them from trying new programs and practices, for fear of falling out of compliance with state and federal regulations and losing access to critical resources. The consequence is a system that works to frustrate rather than support

innovation and experimentation, which limits opportunity to learn what works for schools and students.

An escape from this dilemma requires that increased financial and programmatic flexibility for local educators be accompanied by access to more and better information and greatly strengthened local capacity to collect and analyze data. Greater flexibility by itself is unlikely to produce improvements in the performance of schools and students unless educators acquire the skills and information they need to make wise instructional choices. When educators have the authority and information they need to make good decisions they can more fairly be held accountable for their success in achieving the state's educational goals.

E. Align Incentives

The system outlined above—in which skilled individuals with time and information have flexibility to respond to the needs of their schools and students—would move California a long way towards an educational system that fosters innovation and continuously learns. However it is unreasonable to expect that all individuals will work toward the state's shared goals unless they are provided with incentives to do so.

Currently the incentives in California's educational system do not always support improvement. For example, low-performing schools and districts are eligible for state financial assistance to fund local efforts to improve

performance. In the event that they succeed in raising student performance, however, they may no longer be eligible for assistance. Thus they may lose rather than gain resources as they move toward proficiency for all students.

Beyond basic accountability, however, the state should also structure incentives to support continuous improvement in the performance of schools and students. For example, the state might make new resources, including release time, available to teachers and others who seek to develop and implement new and better strategies and practices for improving student achievement. The state could make these resources contingent on the rigorous evaluation of innovations in policy and practice, and on agreement to share new knowledge about what works and what does not with other schools and districts.

A commitment to base decisions on information would also entail the creation of incentives to support the scaling up of successes in the educational system, and to encourage the abandonment of failures. At present these incentives are weak. On the one hand, California educators have little to gain from sharing what they learn with colleagues in other classrooms or schools, and few opportunities to do so. On the other hand, they are at best dimly aware of what's happening in other classrooms, schools, or districts due to the isolation of schools and classrooms from one another

and the lack of time and support for observation, reflection, planning, collaboration, and mentoring. New policies and practices may benefit specific classrooms or students, but their impact is almost always limited to the settings in which they are developed and implemented.

Beyond this, the widespread conviction that we already know (or should know) what practices work best tends to discourage educators from seeking out advice or guidance from their colleagues or experimenting with new instructional strategies or innovative programs. Incentives for changing practice in schools and classrooms are weak, and there are few rewards for successful innovation and improved performance. In contrast, the penalties for unsuccessful innovations are likely to be swift and certain.

An effective accountability system not only rewards success and supports innovation but also is careful to align accountability with responsibility. Holding educators accountable for the performance of their schools when state regulations and funding decisions prevent them from adopting programs and practices that may be in the best interests of their students is likely to produce frustration and recrimination among educators, rather than improvements in teaching or learning.

In California, where nearly all funding for education is provided by the state, the incentive for local educators to comply with state regulations is very

strong, while the incentive for them to respond to the variable preferences of local taxpayers and voters is relatively weak. The incentive for taxpayers to monitor resource allocation and performance in their local schools is consequently weak as well. Giving local citizens a greater stake in the financing and governance of their schools would offer them a new opportunity to hold their schools accountable, and would create an incentive for local educators to respond more directly to the preferences of local residents and voters.

In summary, the creation of an educational system that is capable of continuous improvement requires the establishment of clear and specific goals. It requires that stakeholders have access to timely, reliable information. It requires increased capacity, particularly human capacity to make use of and build on available information. It requires additional local decision-making flexibility to meet the diverse needs of California's students and to foster innovation. And it requires aligned incentives at all levels from the individual classroom through policymakers in Sacramento. An education system built on these foundations would look very different from the system that California has now.

Conclusion

If we truly expect California's educational system to meet the high standards that we have set for all schools and students, the system must be transformed to support continuous

improvement at all levels. The GDTF studies and the report of the GCEE have made it clear that simply putting more money into the present system will not achieve the ambitious goals that California's citizens have set for their schools and students. Significant improvements in the performance of California's education system will require substantial changes in the ways in which the system is organized and operated. Without such changes, new resources targeted at California's education system will have limited effects on the performance of the state's schools and students, at best, and the long-term economic outlook for the state will remain in doubt. Reorganizing the education system to support continuous improvement will make it possible for California to keep its promises to students, and help to ensure the continued prosperity of our state.

Endnotes

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We would like to thank the James Irvine Foundation and the William and Flora Hewlett Foundation for financial support for the publication of this policy brief. The views expressed are those of the authors, and do not necessarily reflect the views of PACE or its funders.

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