

EDUCATION PROGRAM REFLECTION



Observations and learning from Foundation staff after five years of funding the seven-year Math in Common® initiative, which spans 2013 to 2020.

INTRODUCTION

Math in Common® is a seven-year initiative launched in spring 2013 that supports a formal network of ten diverse California school districts as they implement the Common Core State Standards in Mathematics (CCSS-M) in grades K–8. The ten unified school districts are: Dinuba, Elk Grove, Garden Grove, Long Beach, Oakland, Oceanside, Sacramento City, San Francisco, Sanger, and Santa Ana. Eight districts, all but Garden Grove and Long Beach, will continue to work together in a community of practice through June 2020. The initiative is funded by the S. D. Bechtel, Jr. Foundation. WestEd serves as the formative evaluator and California Education Partners facilitates the community of practice.



Foundation staff has partnered with all ten districts in the initiative’s first five years through regular phone calls, site visits, formal grant reports, participation in three community of practice meetings each year, and involvement in optional multi-district events. Based on this experience, staff has compiled reflections on this ambitious investment in California’s students and educators. We are sharing these reflections here in the belief that learning from Math in Common provide current “real-world” evidence of best practices applicable to standards implementation, as well as insights into barriers districts may encounter.

The districts continue to make progress in their transition toward more demanding standards. Experts in these math standards point out that teachers must shift how they teach (their “practice”). They must move from schooling students in formulas and shortcuts to building students’ conceptual knowledge and ability to explain their thinking. With such shifts, students’ mathematical competencies will increase, and they will be able to apply math to real-world situations. Teachers must also deepen their own conceptual knowledge of math to enable them to shift their practice and encourage deeper and more meaningful student engagement with mathematics. Education scholars maintain that transitioning to new standards is usually a ten-year process, and these CCSS-M standards are particularly exacting. Elementary school teachers, who typically teach all content areas, are also transitioning to new standards in English language arts and science, which makes their work all the more difficult.



While the path is long and challenging, survey data indicate that teachers and principals embrace the goals of the math standards as a better way to teach and learn mathematics. WestEd evaluators have indicated that the Foundation’s catalytic grants to these ten districts have enabled them to progress further and faster than would have been possible otherwise. With funding from the Foundation, WestEd has produced [14 reports](#) on many aspects of districts’ implementation experience, and a set of summative reports highlighting six impacts from the initiative to date.

HIGH-LEVEL OBSERVATIONS

The following are reflections from Foundation staff on five years of grant-supported work.

- When asked what they would do differently, the districts' most recurring theme is "do less." Most districts said they would start small – piloting one key strategy, such as number talks, or concentrating on a specific math practice or focal area, such as student discourse – and roll out the implementation based on experience gained from that small-scale trial. The breadth of changes demanded by these standards, and the fact that the entire country was implementing them with no real prior guidance, proved daunting and in some cases overwhelming. Hindsight is always 20/20, and it is worth noting that one district pointed out that while they would start small if they could do it over, it was also in the process of "doing" that they learned. The struggle, in other words, contributed to the learning.
- In some way, the Foundation may have contributed to the full-scale approach the districts took from the early days. In designing the Request for Proposal (RFP) application, we emphasized the importance of reaching all teachers and students, recognizing that the first state Smarter Balanced (SBAC) test would be fielded in spring 2015, the end of the second year of support. We felt an urgency to reach all educators as rapidly as possible.
- Another major finding the districts note is the importance of keeping senior management aware of the overarching significance, multiple work streams, and results from the initiative. As central as mathematics performance is for district leadership, since it is one of the key state accountability measures, these leaders are also contending with other vital issues including budget, graduation rates, suspension rates, etc. In addition, leadership changes are a fact of life in education. Among the Math in Common districts, there have been 13 changes in superintendents, with only two districts having the same superintendent now as in 2013. Each change in leadership tends to be disruptive to existing work, as the new superintendent seeks changes to improve all educational outcomes.
- The districts continue to stress the important role principals play in promoting and supporting the changes required by the Common Core. Several districts underlined that finding, stating that they would involve the principals from the outset in professional development activities designed for their role as instructional leaders. One district that has achieved impressive progress over the past five years has stated that they only see growth at school sites where the principal is in classrooms observing and supporting mathematics teaching.
- One district noted that they should have involved their collective bargaining unit in the development of the implementation plan. Collective bargaining can play a decisive role in such areas as mandatory teacher professional development and how teacher collaboration time is spent. While not necessarily a barrier in most districts, in some a contentious relationship with the union can undermine the ability to implement desired plans.

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- An unanticipated achievement has been that districts are applying what they have learned from the Math in Common experience to other subject areas. For example, the types of professional development and collaboration that have proven successful in mathematics and additional lessons noted below are being used in other content areas.
- The remaining key lessons learned underscore findings from previous years:
 - Teacher professional development is most effective when provided at the school site level, where teachers can be supported in their actual practice of teaching;
 - Teacher professional development cannot be “one and done”; it must be provided regularly;
 - Building conceptual understanding of mathematics is essential and most elementary teachers have not been exposed to it in their prior education;
 - Development of expertise among a set of teacher leaders/coaches is a powerful mechanism to spread support across a system;
 - Well-structured teacher collaboration/professional learning communities/lesson studies are extremely effective in building teacher expertise and improving practice across a grade level.
- The districts continue to extoll the many benefits they have experienced from participating in the community of practice for five years. All the districts benefitted fairly equally, both in terms of “giving” and “getting.” California Education Partners deserves great credit for the design and facilitation of the community of practice. As noted earlier, eight districts will continue in the community of practice through June 2020.



Participants in the Math in Common Learning Community

- Similarly, the districts are very complimentary about the support they have received from WestEd technical assistance providers. This included services delivered in response to district-specific needs (data analysis, observation instrument design, expertise on supporting English language learners and special education students, etc.), as well as the thorough analysis of SBAC results by school and student sub-group that informs district plans for continuing support.

STUDENT PERFORMANCE

2017–18 was the fourth year students took the Smarter Balanced (SBAC) end-of-year test. This test is significantly different from prior standardized tests. In addition to demanding a greater conceptual understanding of math, the SBAC tests are different in other ways: They are taken on computers and are adaptive, meaning students get more difficult questions based on their correct answers to earlier questions; multiple-choice questions comprise a minority of the questions; and the majority of questions require students to document their thinking and understanding and apply their math knowledge to solving real-world problems.

While scores showed some improvement in the second year, they have remained fairly flat for the past two years. Overall, 39% of California students are considered proficient at mathematics, +5 points compared with 2013.

The Math in Common districts had a similar overall proficiency score (38%, +7 points compared with 2013). Individual districts' performance ranged from a low of 24% (in the district with the highest percentage of English language learners) to 55% of students considered proficient,

and four-year growth in this percentage ranged from +3 to +13 points. When comparing actual performance to predicted performance for California elementary schools, Math in Common districts performed seven points higher than their peers around the state. This continued the trend observed last year, which showed a five-point difference. At the middle school level, the difference was less pronounced (only one point better than other California middle schools), but data on the middle schools should be interpreted with caution. The number of middle schools tends to be much smaller than the number of elementary schools in a district and overall. Any small changes could affect the percentage dramatically.

Many factors influence these results, including students' language abilities, effects of poverty on educational achievement, students' facility with technology, special education needs, teacher preparation in the math standards, etc. In many instances, demographic characteristics that tend to correlate with low student performance, such as poverty level and English language learner status, are higher in the Math in Common districts than the state average. District averages also tend to mask the variation that schools within each district demonstrate. Each Math in Common district team has been provided with tools and technical assistance from WestEd to explore school-level, grade-level, and group-level progress (English learners is an example of a group). These disaggregated patterns of data allow the districts to examine their work carefully, surface bright spots, and redouble efforts in struggling schools with additional precision. The SBAC scores, while important, are just one indicator of student achievement. The districts are attending systematically to many aspects leading to student proficiency in math, including strong curriculum, collaborative teacher planning, and teacher and principal professional development.



While the overall level of student performance statewide is disappointing, with fewer than four in ten students proficient in mathematics across all grade levels, even more concerning are the persistent gaps between groups of California students. Large achievement gaps persist, with English learners, economically disadvantaged, special education, African American, and Latino students performing far below their economically advantaged, White, and Asian peers:

- Nearly three in four Latino students did not meet standards in math (73%) and three in five (61%) did not meet the standards in English language arts (ELA);
- More than two in three African American students did not meet math (80%) or ELA (68%) standards;
- Gaps continue to widen between English learners and non-English learners (31% margin for math and 44% margin for ELA).

Although the gap between English learner students and their peers is not closing in most districts, most Math in Common districts showed stronger percentage gains than the state for these students. Narrowing the achievement gap will remain a focus for the districts in the coming years.

SUSTAINABILITY

For the past two years, the districts have been intentionally planning for how they will sustain the impressive inroads they have achieved with grant funding. In some cases, services enabled by the grant, such as additional math specialist staffing at the central office or technical assistance support, have been or will be covered by the district's own funds. This is a major – and unexpected – outcome. Foundation staff had not expected that the districts, which chronically deal with less than sufficient funding given our state's funding constraints post Proposition 13, would be able to replace even portions of grant funding with their own. That some have made this decision is a testament to the value they perceive and attach to grant-funded supports and activities. In most cases, districts worked intentionally over the course of the grant to build capacity in teachers and leaders and to develop instructional resources and materials so there would be a strong base and critical mass of CCSS-M expertise in-house, and to ensure that those teachers and leaders would continue to head the charge into the future. The continuation of the community of practice should be a boost to that ongoing work.

Districts have been working to build capacity in-house so that teachers and leaders can continue to lead the CCSS-M charge in the future.

The districts have identified some challenges that they will confront: staff turnover and the resulting needs to provide training to bring newcomers up to speed; competing priorities, such as implementation of Next Generation Science Standards (NGSS) and adoption of new instructional materials; reduced funds to provide professional learning or coaching support; and combatting the natural inclination to think “we are done,” when the need to continue to deepen conceptual knowledge and maintain/achieve pedagogical shifts is an ongoing process. While some of the achievements enabled by the Math in Common initiative will mitigate these challenges, it is also realistic to recognize that keeping a focus on math will need support. There is an effort currently underway to use some federal “set aside” dollars specifically to support math improvement. It is also encouraging that there will be many holdovers on the State Board of Education in the administration of Governor Newsom, some of whom are keenly aware of Math in Common and may continue to lobby for a statewide focus on supporting mathematics teaching and learning.

Financially, districts are fully-funded in 2018–19 by the state's Local Control Funding Formula (LCFF), with a 5.2% average increase in revenue versus the prior year. While this increase is good news, California continues to fund K–12 education at a low level compared with most other states.

DISSEMINATION OF MATH IN COMMON LEARNING

Beyond supporting ten districts, the Math in Common initiative has the additional goal of sharing learning so that all other California districts may benefit from this investment. Staff has hired a Sacramento-based consultant to share valuable findings with policymakers, and he has been influential through securing presentation opportunities with a variety of important audiences who further spread the learning from Math in Common. In addition, the Math in Common districts – both individually and in combinations – are presenting at key math conferences, both nationally and regionally. As noted earlier, WestEd, the highly regarded Math in Common evaluator, has authored and disseminated 14 major research reports on learning that is of benefit to the field, as well as a set of final summative reports. WestEd will maintain a curated web presence for Math in Common for several years following the Foundation’s sunset. Finally, staff is deeply engaged with a strategic communications firm, Williams Group, to support all dissemination activities.

IMPLICATIONS OF GRANTEES’ WORK ON RELATED FOUNDATION EFFORTS

The Math in Common work is designed to support the Foundation’s Policy and Advocacy efforts to develop coherent statewide supports for standards implementation. Staff works closely with the Policy and Advocacy team on communicating learning from Math in Common to state-level influencers. WestEd and California Education Partners contribute to these efforts. In addition, staff is able to bring learning from the Math in Common initiative to three other grants in the STEM portfolio: the California County Superintendents Educational Services Association (CCSESA) grant to build the capacity of County Office math and science training specialists to support districts throughout the state; the Partnership for Los Angeles Schools, a set of 18 of Los Angeles Unified School District’s most challenging schools as they implement the math and science standards; and the CSU New Generation of Educators, which has three Math in Common districts within its portfolio. It is also worth noting that the Foundation’s NGSS Early Implementers Initiative is surfacing similar learning about effective practices and leadership development.



Learn from Math in Common

Access evaluation reports and resources at wested.org/project/math-in-common-evaluation.

Learn more about the Foundation’s investments in STEM education at sdbjrfoundation.org/education/stem.