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California Postsecondary Education Commission

Improving Teacher Quality 2007 Grant Awards

The Improving Teacher Quality Program recently concluded its 2007 competition to select grantees who will provide high-quality teacher professional development over the next several years. Teachers in grades K-2 were the focus of this year's Request for Proposals (RFP). As required in the last two rounds of competition, the selected projects must also conduct rigorous evaluation research on their results. Most of the new projects awarded in 2007 are in the subjects of science and mathematics, showing a great need for professional development in these core content areas. This report summarizes each of the new grants that began work in late autumn.

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The Commission advises the Governor and the Legislature on higher education policy and fiscal issues. Its primary focus is to ensure that the State's educational resources are used effectively to provide Californians with postsecondary education opportunities. More information about the Commission is available at www.cpec.ca.gov.

Commission Report 07-23

Introduction

The needs of California teachers in kindergarten through grade 2 for help in teaching mathematics and science turned out to be paramount in the most recent competition held by the Improving Teacher Quality (ITQ) Program. The program, operated by the California Postsecondary Education Commission (CPEC), receives approximately \$8 million annually from the federal No Child Left Behind Act of 2001 to support university-based teacher professional development projects throughout the state. CPEC awards these grant funds through a competition in which applications are evaluated by expert readers and the best proposals are recommended for funding.

The 2007 competition resulted in the award of \$7,829,214 to a total of nine projects serving several hundred teachers in kindergarten through grade 2 classrooms from the northern Sacramento Valley to San Diego and Imperial Counties. The focus on K-2 teachers was established earlier this year in order to address the increasing need for professional development in the early primary grades, especially because research shows that the achievement gap can start in these years. Although the Request for Proposals did not require training in any particular subject, most of the applicants sought funding in science or mathematics or both. As a result, most of the grants awarded will help teachers improve their content knowledge and teaching strategies in order to improve student achievement in those subject areas.

The grant competition was held over the summer and fall of 2007. All of the projects that were funded will have three years to provide professional development and an additional year to finalize their data collection and analysis and report the effects of

the project. In the past several rounds of competition, the grants have been designed to address issues of state need in K-12 education. In addition to providing professional development, the selected projects are also required to conduct rigorous, scientifically-based evaluation research to show the effects of their work on both teachers and students.

Projects Funded in 2007

Science & Math Impacting Learners of English (SMILE)	UC Irvine and Compton USD	\$999,666	Math and Science
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This multi-level project will provide one-week summer institutes and academic year Saturday training to 75 teachers per year. The project also incorporates a one-day institute for all elementary principals each year, and includes Everyday Literacy for Families evening training for parents. It aims to increase student achievement in math and use science lessons to increase achievement in both Language Arts and Math. It will also strengthen principal support and parental involvement to support the goals of the project. Site-based grade-level and vertical team meetings for preschool through grade 3 teachers will encourage classroom implementation.

Compton USD is one of the highest need districts in the state, with a 34% poverty rate, 75% English learners—almost all of them Latino—and several years of district Program Improvement status. It only recently emerged from a state takeover and continues to struggle with major issues in student achievement and school improvement. At the same time, the district shows an extremely high level of commitment to this project. The project hopes to reach all of the K-2 teachers in 16 schools as well as the parents of students, and also to provide professional development to principals in all 23 elementary schools in the district.

K-2 STARTS: Science and Technology Assistance for Rural Teachers and Small Districts	University of the Pacific, Stockton and New Hope Elementary SD	\$991,948	Science
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This project serves 35 K-2 teachers in small rural school districts in San Joaquin, Merced, Stanislaus, and Tuolumne Counties, with priority being given to schools with the highest need. The project is aimed at improving student achievement in English/Language Arts, Mathematics and Science through an increase in inquiry pedagogy and standards-based science instruction, and the integration of writing and math through the use of science notebooks. The project also intends to foster teacher leadership by offering some participants additional training as Teacher Leaders so that they can support continued implementation of the project in their schools and regions.

As with other projects, this one incorporates a rigorous, scientifically-based evaluation research plan to determine its impact on teacher practice and student achievement. A unique feature of the project is that teachers who take the professional development will also be trained to evaluate the student notebooks produced during the project period, effectively becoming part of the research team by scoring and collecting data from the notebooks (although none will score the notebooks of their own students). This experience will help teachers continue to use notebooks as a tool both for teaching science and for evaluating student understanding of science in lower grades where standardized tests are not available.

Mathematics Understanding, Learning, & Teaching (MULT Project)	CSU Fresno Kremens School of Education and Riverdale USD	\$968,370	Mathematics
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This project is designed to address the decline in mathematics proficiency as students progress through the grade levels; its purpose is to support foundational knowledge and conceptual understanding of mathematics in early grades. The professional development models to be used are Cognitively Guided Instruction (CGI) and Japanese Lesson Study—both of which have a strong research base. Teachers will learn to make instructional decisions based on children’s mathematical thinking, and then will design and redesign lessons that are able to address student needs.

Professional development will be provided in institutes and workshops during the summer, and also during school-year Saturday workshops, school day meetings, and specified days that will be used to design and implement lesson study. The teachers to be served will be drawn from low-performing schools in Riverdale and Chowchilla in the central San Joaquin Valley—rural school districts with high poverty rates, large numbers of English learners, and few resources for intensive professional development.

Mathematics and English Language Development (MELD)	San Diego State University (Imperial Valley Campus) and Calexico USD	\$971,371	Mathematics, English
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This project aims to work with most or all K-2 teachers in six Calexico elementary schools to increase student performance in mathematics and English language acquisition. The teachers will attend summer institutes and year-round Theory Into Practice (TIP) sessions to learn to use Cognitively Guided Instruction (a research-based approach shown to be valid in helping teachers provide effective mathematics instruction in primary grades) and Mathematical Thinking strategies. They will blend both those strategies with English Language Learner methods to support student learning of mathematics and make the solving of word problems more accessible to English learners.

The project helps teachers implement K-2 math standards and offer differentiated instruction that can reach students at all levels of learning. The TIP sessions will help teachers develop Professional Learning Communities in which they can plan lessons, observe each other teaching those lessons, and debrief to share what they have learned and how they will integrate that learning into future classroom practice. In addition to the K-2 teachers, some preschool teachers may join them for some of the professional development. Also, the project will provide Family Math Nights twice a year to help parents support problem-solving activities for their children.

Strategic Alliance of Robla/ UC Davis/Sacramento COE	UC Davis and Robla School District and Sacramento County Office of Education	\$273,127	Mathematics
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Through monthly after-school meetings and short summer institutes, K-2 teachers in a small, educationally-challenged school district will learn to understand the mathematical thinking of their students and help them to develop solution strategies to improve math achievement. Teachers will learn to cultivate children’s mathematical understanding by engaging them in mathematical problem solving, guiding discussions of strategies of students, and building on the mathematical intuitions of children. Professional development is based on Cognitively Guided Instruction. It will begin at two schools in Year 1 and serve additional teachers in at least two more schools in subsequent years.

The project goals include increasing the conceptual knowledge of math of students; increasing teacher pedagogical content knowledge; and promoting teachers' ability to guide students in discussing their mathematical thinking. This project is modeled after a successful CPEC project at Markham Elementary in Vacaville. That project, although one of the smallest ITQ projects, was one of the most successful. It produced research results showing that students of the teachers receiving this type of professional development scored higher on achievement tests than students in classes whose teachers had not participated.

Science-Centered Literacy for K-2 Students: Project SMART	Chapman University and Anaheim City School District	\$901,404	Science, Mathematics, English
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This project is a unique mix of a summer academy and a “mini Professional Development School” approach where pre-service candidates get training and work side-by-side with current teachers, strengthening current teacher skills and enhancing the science expertise of new teachers. K-2 teachers from the Anaheim City School District will participate in Summer Science Academies to put new learning into immediate practice with summer school students, and to interact with teacher pre-service candidates. School-year professional development sessions will provide science content, science and literacy pedagogy, math standards, and scientific technology. Teachers will meet regularly in Professional Learning Community teams to support classroom implementation and will split into teams to observe each other's teaching. A special focus will be placed on strategies for English learners.

Also to be provided are Family Science Nights, a bilingual newsletter, and other supports for parents to assist children in science and literacy learning. Evaluation research will measure results in several goal areas: increased achievement for K-2 students in science, literacy, and mathematical problem-solving; increased student exposure to science technology; increase in the science knowledge of K-2 teachers, ability to implement integrated science and literacy strategies, and ability to use technology and math to support science instruction.

Mathematics in the Early Grades (MEG)	CSU Chico and Red Bluff Union Elementary School District	\$944,415	Mathematics
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This project is aimed at the unmet need for professional development in California's Central Valley, especially in small, rural school districts where geography and lack of resources make such training very challenging. It provides three years of intensive professional development in mathematics content and pedagogical training for teams of K-2 teachers representing three small school districts in the northern Central Valley (Cascade ESD, Orland USD, Red Bluff ESD), and will also include special education resources teachers from the Tehama County Office of Education. The teachers will participate in an academy model of summer school, directly working with students using a lesson study model in which they plan, teach, reflect on, and revise collaborative lessons.

In addition, all the participating teachers will receive a minimum of 24 hours of ongoing content-based classroom coaching each year to help them integrate their learning into daily classroom practice. The project provides for greater articulation between K-2 and preschool teachers, and will help both groups increase their understanding of the California mathematics content standards and the new Preschool Learning Foundations that are expected to be released soon by the California Department of Education.

K-2 Teaching Learning Collaborative (TLC)	CSU Long Beach and Montebello USD	\$950,694	Science
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This project provides three years of sustained professional development for K-2 teachers through Facilitator Academies and Teaching Learning Collaborative Academies, both of which will offer sessions during the summer as well as the school year. The Facilitator Academies will provide training in leadership and coaching skills, and will also provide in-depth professional development for six Teacher Leaders in pedagogical content knowledge, including lesson design and strategies for English learners.

The TLC Academies will provide content knowledge to 32 teachers that the project plans to serve. The science content will be provided by university scientists; other university instructors will provide training in the “5E” instructional model for shaping lessons—“Engage, Explore, Explain, Elaborate, and Evaluate.” School-year sessions will take place in the classrooms of participants, where K-2 students will receive direct support as their teachers are being trained. This is a collaborative model in which teachers will practice lesson study and engage in reflective practice to see how they are implementing their professional development in the classroom. The project extends a previous successful CPEC Eisenhower Grant that addressed grades 4-8 and 9-12 and involved Garvey School District, one of the partners in this grant.

ArtsCore K-2	UC Irvine and San Diego Unified School District	\$828,219	Visual and Performing Arts and English
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This is a project designed to help teachers implement standards-based arts instruction in their K-2 classrooms in a manner that supports the students in English/Language Arts and mathematics, especially for English learners. It provides workshops throughout the first year of a two-year process for teachers, sends Visiting Artists into the classrooms 27 times a year to assist teachers in implementing San Diego’s standards-based arts curriculum. Teachers will implement the lessons with the help of artists in the first year. In the second year and beyond, they will be assisted by district curriculum specialists to continue offering lessons on their own. The teachers will learn how to integrate the arts curriculum into their regular class work, allowing teachers to spend time on the arts and also enhancing how students are able to master other subjects, especially English/Language Arts and English Language Development. A small but important component of the project will be the integration of activities, particularly stories and plays, in which children receive training in ethics and positive social interaction.

The model for an integrated arts curriculum was developed by the University’s project team in a previous successful ITQ project in Orange County, but that work focused on high school only. The same team did a small pilot project in elementary school. This project—which is hoped will reach all of the neediest schools in a large section of urban San Diego—would like to expand the pilot project to scale. The district is committed to reinstating arts education into elementary school and has developed a standards-based curriculum for all grade levels. Many of the schools to be served in this project lack the resources for professional development that would enable teachers to actually implement that work. This project will provide extensive professional development in those schools, and results from the accompanying research evaluation will establish the value of intensive professional development and integrating arts into the curriculum that can trigger further training opportunities in the future.

Conclusion

The 2007 Improving Teacher Quality Grant competition was marked by a surprisingly small number of applications (23 overall), which seems strange in light of the fact that elementary schools have been clamoring for professional development that goes beyond a narrow focus on reading. This may have been a factor of schools having fewer resources with which to pursue grants, an issue of timing, or simply being too busy and overloaded by other initiatives, especially implementation of other parts of the No Child Left Behind Act, to take advantage of opportunities they have for further professional development. The ITQ staff will soon develop the framework for the 2008 grant competition and will be completing further research to see what kinds of models and strategies should be encouraged. We will also work to increase the potential number of applicants through wider communication, online strategies, and development of initiatives that speak directly to the greatest needs that California has in assuring that all their students have high quality teachers and other resources they need.

