

California State University, Northridge (CSUN), in collaboration with three school districts and a local charter school, proposes a Development Grant to develop and evaluate the i3 Collaboration Resulting in Educators Applying Technology Effectively (CREATE) Project to improve student achievement through the use of technology in implementing the Common Core State Standards in Mathematics (CCSSM) [Absolute Priority 5, Subpart (b)]. Specifically, we plan to support teachers—both pre-service and in-service—in creating learning activities aligned with CCSSM through the use of a tablet-based application (“app”) developed specifically for this project and through structured teacher collaboration. Our discovery-learning app will serve as a tool for teachers to help them develop and implement lesson activities, shifting their practices in the process. Our app helps teachers both design and implement lesson activities that focus on exploring the relationships between various representations of mathematical concepts with direct applications to real world problems. Our novel approach combines the use of the app with a structured form of collaboration that we are calling the Responsive Teaching Cycle (RTC), which will simultaneously blend the clinical experience for student teachers with the professional development of their mentors (Cheng, 2010). Specific measurable outcomes will show that:

- the 28,375 pupils taught by treatment teachers will score significantly higher on new state standardized assessments than pupils taught by control teachers,
- the treatment teachers’ course content and pedagogical practices are aligned with CCSSM as evidenced by the lesson activities that they design, and
- treatment teachers will continue using RTC and the discovery-learning app beyond their treatment period.

Project partner, Learningtech.org, will write the computer code for the app and the CSUN Center for Assessment, Research, and Evaluation (CARE) will conduct the evaluation.