Abstract

Challenger Center for Space Science Education (Challenger Center), a nonprofit organization, proposes an i3 Development project entitled, "Enriching Education Through Dynamic Simulation and Technology." Challenger Center currently offers site-based educational simulations through its network of regional centers. Challenger Center proposes to transition its site-based simulation technology to the classroom to address **Absolute Priority 7—Effective Use of Technology**, **Subpart (b) Technology-enabled solutions**. Challenger's dynamic and interactive simulations are ideal for teaching systems concepts with multiple interrelationships, cause and effect actions, and adaptable problem-solving situations, leading to improved achievement in math and science in high-need students. There are six project goals: ***(1)*** Adapt Challenger Center's technology platform to work in a classroom or computer lab. ***(2)*** Develop and implement a classroom-specific simulation appropriate to 5th grade science objectives. ***(3)*** Capture and analyze the data flow from the student activities to enable the teacher to assess student understanding and progress in real-time. ***(4)*** Produce and evaluate professional development modules that ensure that teachers understand the science concepts, can effectively direct a simulation, and can react appropriately to student actions and learning (pre- and post-simulation activities). ***(5)*** Deliver and evaluate the simulation-based learning at partnering schools. ***(6)*** Produce moderate evidence that participating students achieve significant gains compared with non-participating students. The project will serve 1500 5th grade students in multiple LEAs. The project partners include three identified LEAs in Virginia and Pennsylvania (more will be added upon award), the Virginia Department of Education, the University of Virginia, two of Challenger's regional centers, and the Redmon Group.