

**Literacy-Infused Science Using Technology Innovation Opportunity (LISTO):
A Five-Year Validation Project**

Priority 2 Promotes STEM education (science and technology innovations)

Priority 4 Serves 46 rural schools among 70

Description Validates prior research, Project Middle School Science for English Language Learners and economically challenged students (MSSELL, DRL-0822153), across 70 randomly-assigned rural, urban, and suburban schools with 11,200 students and 560 teachers. MSSELL met standards without reservations per WWC. The **goal** is to validate, via a longitudinal RCT study, literacy-infused science (LIS) innovations, building instructional capacity (IC) of teachers and improving students' science and reading/writing literacy achievement. The **objectives/outcomes** are (a) examine the impact and efficacy of LIS virtual professional development (VPD) for teachers/*Scaled VPD in Science validated; reflective teachers; improved science, reading, writing achievement*; (b) determine the sustainability of LIS innovation/*Fidelity instruments for building IC; leadership model for improving IC, sustainable student growth*; (c) provide scaled outcomes with dissemination of products, training, and sustainability/*Peer dyad model for LIS; MOOPILs; LISTO curriculum* (d) test informal science in FIS and SRM²/*FIS packets open access; model with manual for SRM²*.

Features: (a) new schools with two levels (teacher & students); (b) follow-up VPD and student monitoring through grade 8 for Cohort 1; (c) standards-aligned science curriculum, which includes virtual notebooks for Written and Academic oral language Vocabulary development in English in Science (WAVES), Technology Integration for English Language and Literacy Acquisition in Science (TIELAS), and the 5E model used daily; (d) a virtual teacher mentoring/coaching model; (e) virtual teacher professional development; (f) virtual pedagogical observations; (g) Family Involvement in Science (FIS); and (h) Scientists as Role Models and Mentors (SRM²) connecting university students to grade-level students.

Partners: Citrix, Diem Technologies, EduSmart, Hoot Education, Inline Resources, TK20, Drs. Janice Koch, Gina Kunz, Margarita Huerta, McGraw Hill, Pivothead, Govision, Johns Hopkins University, Riverside, 37 school districts.