

ABSTRACT NARRATIVE**Engaging Quality Instruction through Professional Development**

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EQuIPD- Engaged Quality Instruction through Professional Development, is a professional development program designed to produce highly qualified teachers in STEM practices for all children. Since 2014, Florida has a critical teaching shortage in the field of Science (Department of Education [DOE], 2017) and since 2016, middle school science courses. Florida Department of Education [FLDOE] has identified science as the number one critical shortage area for teachers, with many districts reporting teachers do not hold proper certification for teaching of these courses, and FLDOE has reported both Mathematics and Computer Science & Literacy in their top 10 list for Critical Teaching Shortages. [FLDOE, CTS 2017]. EQuIPD merges best practices in teacher professional development, technology education, and workforce development to create an innovative model with two goals: A three-year K9 teacher professional development program to support teachers in a “train the trainer model” for *increased content and pedagogical knowledge* using System Thinking as a frame for incorporating technology into STEM inquiry lessons. EQuIPD will explicitly address the following absolute and competitive priorities: Absolute Priority 1—*Supporting Effective Teachers*, Competitive Priority - *Promoting Science, Technology, Engineering, or Math (STEM) Education, with a Particular Focus on Computer Science*, and Invitational Priority - *Support for the Use of Micro-Credentials*. UF Project partners in this grant include College of Engineering, College of Education, UF Flex, IFAS and CPET. Additional partners are EDIOS technology, The Florida High Tech Corridor and 10 participating school districts. EQuIPD will center its work in Florida within counties with a high population of schools designated as low performing (30% of lowest 300 performing elementary schools are within these counties), spanning diverse urban to rural school districts. This randomized controlled project designed to meet What Works Clearinghouse (WWC) standards without reservations consists of a minimum of 100 teachers and 150 control teachers, and will assess impact of targeted teacher professional development to increase the number of highly qualified STEM elementary and middle school teachers in these schools, resulting in improved student learning activities and outcomes. EQuIPD will provide professional development in a “train the trainer” model which is content focused, incorporates active learning utilizing technology, supports collaboration, models effective practice, and provides ongoing coaching and expert support. In the first two years of the grant teachers will be supported with over 240 hours of support, resources and mentoring. In the third year of the grant, EQuIPD will provide support to districts as they incorporate this program into their existing PD structure. Throughout this program teachers will be supported in their work by district personnel, coaches, and experts, and by each other as part of a learning cohort. In addition to teacher professional development, EQuIPD will address the STEM Workforce development pipeline in an exploratory study to *increase alignment between classroom and industry practices*, supporting teachers in acquiring STEM credentials recognized by industry, and providing models for teachers to align industry and classroom STEM practices.