Abstract

Include Neurodiversity in Foundational and Applied Computational Thinking (INFACT) is an early-phase field-generated initiative to infuse Computational Thinking (CT) into STEM teaching, learning, and assessments for grades 3–8. The consortium of INFACT partners includes: TERC, Digital Promise, Florida State University, Looking Glass Ventures, New Knowledge Organization, University of Florida, and University of Maryland. INFACT addresses EIR’s Absolute Priority 1 by targeting the high-needs audience of neurodiverse learners. INFACT addresses Absolute Priority 3 and the Competitive Preference Priority by designing, implementing, and studying a comprehensive program that lays a foundation for Computer Science (CS) learning and infuses CT into STEM learning and teaching. The design research and the quasi-experimental studies involved in the evaluation research of this early-phase project includes over 1000 students in grades 3–8 classes, with at least 20% identified with an Individual Education Plan (IEP status) because of issues related to learning variability. INFACT takes exceptional approaches to the absolute and competitive EIR priorities including: a) Leveraging expertise and existing research-grounded learning materials, assessments, and PD models from a national consortium of leading research teams in CT and STEM education, learning sciences, cognitive psychology, and learner variability; b) Designing, implementing, and researching an innovative, comprehensive program that aligns learning, assessment, and teaching models within a progression for grades 3–8 that builds a strong CT foundation and leads to the application of CT in STEM projects; c) Leveraging the natural overlap between CT and learning variability; and d) Studying the impact on a broad range of learners nationwide, including the potential to close the gap in STEM performance and participation that is related to learning variability.