

**Early-Phase Competition Absolute Priority 3 (STEM)
Alabama State Department of Education - AMSTI
S411C230211**

New Virtual Reality Technology to Enhance Students' Algebra Knowledge and Skills

Applicant Name: The Alabama State Department of Education (ALSDE)

Project Title: New Virtual Reality Technology to Enhance Students' Algebra Knowledge and Skills

Type of Grant Requested: (select one) Early-Phase Mid-Phase Expansion

Absolute Priorities the Project Addresses: (select all that apply)

Absolute Priority 1-- Demonstrate a Rationale (Early), Moderate (Mid), Strong (Expansion)

Absolute Priority 2-- Field-Initiated Innovations—General

Absolute Priority 3-- Promoting STEM Education

Absolute Priority 4-- Meeting Student Social, Emotional, and Academic Needs

Absolute Priority 5-- Educator Recruitment and Retention

Competitive Preference Priorities the Project Addresses: (select all that apply)

Competitive Preference Priority 1— Promoting Equity in Student Access to Educational Resources and Opportunities: Implementers and Partners

Competitive Preference Priority 2—Supporting a Diverse Educator Workforce and Professional Growth to Strengthen Student Learning* (FOR EARLY-PHASE AP5 APPLICANTS ONLY)

Total number of students to be served by the project: 3,490 (790 in formative stages, 1,350 treatment in the impact study and 1,350 after, when the control group uses the program).

Grade level(s) to be served by the project: 10th Grade

Definition of high-need students: “Students at risk of educational failure or otherwise in need of special assistance and support, such as students who are living in poverty, who attend high-minority schools ... [or] who are far below grade level” (US DOE, 2012).

Brief description of project activities: In Alabama, this project will build Algebra 1 supports and live tutoring session in virtual reality, establish their efficacy, and disseminate study findings of CurioXR, an immersive VR program designed to improve access to high quality tutors and student math outcomes, particularly for high-need and rural students.

Summary of project objectives and expected outcomes: The project will: (1) create and test strategies to enhance the quality and adoption of CurioXR; (2) implement and evaluate the efficacy; (3) disseminate findings; and (4) calculate cost and track interest and sustainment.

Summary of how the project is innovative: CurioXR will improve its cutting edge VR supports for Algebra 1 students, paired with live tutoring sessions, to increase student engagement and learning.

Other studies related to the proposed project: This builds from studies of VR effectiveness on student engagement and learning (e.g. Cai et al., 2021; Mahmoud et al., 2020; Luo et al. (2021).

Proposed implementation sites: 50 high schools in Alabama.