

Developing Mathletes: Motivating STEM Learning through Baseball/Softball and Growth Mindset

This project aims to improve student performance, attitudes, and beliefs about STEM through the application of growth mindset strategies to an existing STEM curriculum called the Science of Baseball (SoB), which has been implemented in over 350 schools across the U.S. A rigorous evaluation that includes 20 schools will test whether the curriculum, which leverages students' interest in sports, delivered via a pedagogy that promotes a growth mindset, can improve learning and motivation in math among high need students. Aligned to the 7th Grade Common Core Mathematics Standards and the school district's scope and sequence, the STEM curriculum is aimed at making traditionally difficult subjects more exciting for historically underrepresented and high-need students.

Research questions are aimed at evaluating the impact of the Science of Baseball/Softball curriculum on students' growth mindset beliefs and math performance. Contributions to research include: a) testing a strategy to develop children's growth mindset in STEM education and among high-need 7th Grade students, b) studying how sports can be used to leverage students' motivation to persist in STEM learning, and c) investigating how teachers develop and use growth mindset in their teaching. Contributions to practice include a) a set of modules that address Common Core math standards and can be easily integrated into 7th grade math classes, b) evidence about the conditions under which the modules are effective, and c) evidence about the aspects of student learning impacted by the Science of Baseball/Softball modules and the extent to which those impacts are sustained.