

## Proposal Abstract

**E=(MC)<sup>2</sup> ( Excellence is yielded in Mathematics through Mobile Communication and Collaboration)** is a consortium between The Edmund Miles Middle school in Amityville, NY , the Arturo Toscanini Middle school (MS 145) in the Bronx, NY and Our Lady of Lourdes, a nonpublic school in West Islip, NY. MS 145 is an ethnically diverse persistently lowest achieving school designated by NYS as in a Restructuring Advanced Comprehensive phase. Edmund Miles Middle school, the lead in this consortium serves 630 students 32% of which are from Latin American countries with 8% of that population being Limited English Proficient (LEP) and 57% African Americans. Sixty-three percent of the students are eligible for free lunch. Edmund Miles Middle School has a veteran teaching staff with 49% holding Masters degrees and only 2% having less than 3 years experience.

Students in grades 7,8 and 9 will use iPads to engage in activities that will deepen their understanding of complex concepts in mathematics such as graphing algebraic equations and inequalities, analyzing probability patterns and solving geometry problems. Technology tools such as digital media including hand held devices such as cell phones will be used to create personal learning networks (PLN's) for research, problem solving and ongoing assessment activities. The classes involved in **E=(MC)<sup>2</sup>** will maintain project data which they will share with their peers using cloud-based apps such as WeTxt, Google Voice and Poll Everywhere. Edmund Miles Middle school students will partner with students from MS 145 and Our Lady of Lourdes using a project Ning, Podcasts and Phonecasts to share their data across schools In addition, all schools will use videoconferencing to connect with businesses and experts in the field of mathematics such as the Bathysphere Underwater Biological Laboratory, an underwater biology lab to study shipwrecks of the Great lakes or Members of the Associated Builders and Contractors, Inc. in Northern Ohio to provide opportunities for students to make real world connections with careers that focus on a strong mathematics background..

The project will also highlight the principals of engineering focused on planning and designing end of year projects in grades 7, 8 and 9 that simulate real world applications offering students a greater understanding of the role mathematics plays in their lives. **E=(MC)<sup>2</sup>** will serve about two hundred students per year in grades 7,8 and 9 .

The goals of **E=(MC)<sup>2</sup>** are:

- To improve academic performance in achieving mastery of the NYS Learning and Common Core Standards in mathematics.
- To increase the use of instructional technology, specifically mobile and hand held devices, in collaborative projects to enhance students learning and foster 21<sup>st</sup> century skills.
- To improve teacher effectiveness by emphasizing content knowledge and pedagogical best practices in using technology in the classroom and library media center. Furthermore, **E=(MC)<sup>2</sup>** will focus on the NYS Board of Regents Reform goal for raising graduation rates for at risk students by increasing student engagement and offering higher level coursework in mathematics leading to a pathway to college and career readiness.

Outcomes will include improvement in academic performance in mathematics with a vision of increased interest in taking more advanced mathematics coursework in addition to increased comfort and proficiency in use of mobile technologies for teachers, fostering 21<sup>st</sup> century environments. Digital Age Learning Inc., a technology integration company whose staff has over 30 years of experience in integrating technology in NYC classrooms, will provide professional development on all technology tools. Peer review and self-assessment are key components of the staff development program as emphasized in the NYS Professional

Development and NYS Teaching Standards and both schools in this project will apply these strategies with the goal of improving student performance

