

## 2017-18 PROGRAM EVALUATION ABSTRACT

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**Teacher Center:** Bronxville Teacher Center  
**Title of Program:** Bronxville Promise  
**Target Audience:** K-12 Faculty  
**Facilitators:** Sarah Ingrassia, Nancy Letts, Tammy Casey, Logic Wing, Learning and Brain, Challenge Success, Brad Posnanski, Karen DeMauro, Greg Shamie  
**Method of Delivery:** Consultant (Face-to-Face)  
**Frequency and Duration:** Weekly Curriculum Meetings, Two Conference Days, Six Days of Public Speaking Coaching, Six Days with ES Mathematics Consultant, Five-Day Summer Curriculum Renewal Institute, Learning and the Brain Conferences on Innovation and on Mindfulness

**Program Goal:** Students will demonstrate the capacity to grapple with authentic problems and questions, to assume leadership for their learning, to collaborate with peers, to use technology as an essential inquiry tool, and to present the results of their inquiry to authentic audiences in order to deepen and extend their investigations.

**Program Overview:** The goals that were set for our professional development work could not be achieved through a single program or in a single year. The multi-faceted approach included professional development in project-based learning, rubric design, Socratic Seminar, NGSS, public speaking, design thinking, computer programming, and TI-Nspire, over the course of three years.

**Assessment Methodology:** Analysis of student work using rubrics for innovation, leadership, and engaged citizenship

### **Student Outcomes**

K-12 students have engaged in a multi-year study of the Bronx River. The high school students developed a stationary probe for testing water quality. This equipment has remained submerged in the river to allow longitudinal testing of the levels of pH, salinity, dissolved oxygen and oxidation reduction potential, which are all indicators of the health of the river and its ability to support living organisms. The elementary school students have visited the river and made detailed habitat reports, while the middle school students have participated in the analysis of water samples. The students have shared their findings with local community leaders and scientists from Sarah Lawrence College, expanding not only their understanding of water pollution and strategies for caring for the environment, but also political and economic factors that can support or impede reform efforts.

In the High School, students participated in “Call to Action” PBLs. As a result of this work, students tutored Cambodian students of English via Skype, spoke with local and state legislators about gun control, established a one-love program, raised funding for an orphanage in Tanzania, and built homes in Nicaragua. In addition, the High School students honed their presentation skills in ELA and Social

Studies classes. As a result of this work, the research projects of fifty-one students advanced to the Regional Level National History Day, and one group of students qualified to present its project during the national NHD finals which will be held next week at the University of Maryland.

In the Middle School, students have built Rube Goldberg machines that serve a useful purpose. These machines included automatic pet feeders, shoe stretchers, waffle iron starters, and more. The students also created model Lunar Colonies that reflect knowledge about the lunar environment, and community structures that support the physical and social/emotional health of human beings.

In the Elementary School, third grade students interviewed first graders to learn about their interests and observed them during math lessons. Using this information and their knowledge of loops and conditionals, the third graders created digital mathematics games that were tailored both to the first grade students' interests and to their level of mathematical understanding. During this project, the third graders demonstrated not only coding skills and the ability to engage in creative prototyping, but also their ability to use empathy as an integral part of the design-thinking process.

In addition to the above units of instruction, teachers have crafted Socratic Seminars for students in grades two through twelve, engaged a professional string quartet to "premiere" student compositions, designed lessons that used mathematical graphing processes to create art, and supported student playwrights and documentary filmmakers.

**Relevance:**

When questioned about their work, students' responses reflected knowledge of design thinking, a willingness to take academic risks, the ability to recover from failure, and creativity, as measured by rubrics that were developed by teachers during professional development sessions. Teachers reported that the most influential professional development activities were 1) providing time for teachers to collaboratively design lessons, 2) the collaborative development of a shared and well-defined design thinking process, and 3) the collaborative development of rubrics to guide students learning.