What is the impact on society beyond science and technology?

Note: The following text is Robert Moses' answer to a question that NSF requires to be answered in the annual report for any NSF award. Below is what he wrote in answer to this question in the 2013 annual report for DRK12 award 0822175: The Development of Student Cohorts for the Enhancement of Mathematics Literacy in Underserved Populations.

In our view, the holding together of our society depends on the belief of citizens that they can achieve a measure of economic security and safety in the community that will sustain family life. Such security in turn depends on the existence of real educational opportunity –- opportunity to learn the reasoning skills and technical skills demanded in well-paying jobs. Even nonprofessional work nowadays requires literacy, technical skills, reasoning skills, and collaboration. When our youth begin to sense in Grade 7, 8 or 9 that their schools and communities are in fact not preparing them for those opportunities, they seek alternative tracks. This is where the “school to prison pipeline” begins.

The impoverished communities in which we work are full of hope. We aim to reach those youth who have not yet given up but who are vulnerable – those who have been performing in the bottom quartile on measures of educational achievement. By targeting those students in particular, we are seeking not just to “close an achievement gap” but to establish national standards and practices for their education in a society where all citizens can believe in a just society, can have a dream, and can know that their contributions are worthy. This is more than just mastering a math curriculum.

Our work’s Constitutional dimension expands membership in the nation’s “We the People” class. Its economic dimension situates quantitative literacy on the same place as reading and writing, the trio of literacies without which access to 21st century economic arrangements is not happening for those without affluent parents. We are arguing that it is important now to include the young people (in all demographic and socioeconomic niches) in the dream and opportunity for security and safety. It is important that they be included not just as juniors listening to their adult advisors, or as participants in demonstrations, but as agents on their own who learn to evaluate their history and environment, and determine actions. For this reason we use a pedagogy that respects the cultures of the students, enables teachers to diagnose their current knowledge and beliefs and build on them, and provides group activities that create a common culture as well as a frame of reference on which to build the mathematical concepts needed to advance in STEM education programs.