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HUFF
POST EDUCATION

The State of STEM Education

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I had the privilege of being among 300 education leaders, students, and teachers at NBC's Education Nation summit held at the New York Public Library a few weeks back. Guest speakers and panelists included Arne Duncan (Secretary of Education), Condoleezza Rice, Chelsea Clinton, Jeb Bush, and presidents and CEOs from multiple corporations and organizations.

There was significant discussion on three topics that are most pertinent to our education programs at the Verizon Foundation: Common Core standards implementation, building a STEM (science, technology, engineering, math) pipeline, and technology integration in education.

The Common Core Initiative seeks to standardize the curricula covered by each state so that everyone, regardless of where they went to school, will have the same knowledge. In addition, the initiative seeks to clearly set rigorous and relevant benchmarks, raising the bar for today's students. States are working to meet the new standards by 2014, and in order to do this they are focusing on two important areas: informing parents and preparing teachers.

Parent awareness is paramount to the success of the Common Core. Because these assessments are more challenging, it's anticipated that student performance may decrease compared to prior years and assessments. This is expected as we transition to the new assessments, but if parents are informed of these changes well in advance, we can all work together to best prepare students and to set appropriate, though still high, expectations.

Secondly, this new model is just that. It's new, and teachers are spending a lot of time and effort to best prepare. They are seeking Common Core aligned resources, like those available through the Verizon Foundation's [Thinkfinity](#) platform, a free online resource that offers lesson plans and more, all aligned to Common Core standards. And it was clear that these educators are engaging in train-the-trainer professional development in their schools. Armed with relevant resources and the support and guidance of their peers, today's teachers will be well prepared as they adopt and align curriculum and strategies toward the new standards.

The summit also showcased the role of technology in teaching and learning. As Zoran Popovic, a University of Washington professor in the Center of Game Science, stated, "Anyone with a smartphone can have a customized education." His team is developing educational games that constantly scale based upon a user's performance. With effectively integrated technology, especially mobile technology that is available 24/7 and tied to one user, teachers benefit from real-time feedback and individualized learning based upon prior performance.

Lastly, the summit provided a forum for excellent programs aimed at increasing interest in STEM subjects. In the United States only 5 percent of college graduates enter the workforce with STEM degrees. This is shocking compared to China at 46 percent. In the meantime, STEM jobs are expected to grow at twice the rate of jobs in any other field over the next five years. Our focus should be two-fold: to help teachers to innovate the way students are learning science and math so that they gain confidence and achieve while also driving interest and passion for STEM. And this needs to happen well before students enter high school.

STEM careers don't end with scientists and engineers; we all recognize the need for more well-qualified math and science teachers. It is estimated that 280,000 math and science teachers are needed by 2015 for the U.S. to remain globally competitive. However, about 71 percent of 12th graders have low interest in STEM fields, regardless of how proficient they are. Organizations like UTEACH, created by the National Math and Science Initiative, are focused on emphasizing pedagogy with math and science majors. Ninety-two percent of graduates of the UTEACH program go on to teach, and 85 percent of them are still teaching five years later. The program is so successful it is currently in 34 universities across the country.

We are doing our part at the Verizon Foundation by providing free Common Core Standards aligned content to educators, by training teachers through our Verizon Innovative Learning School program on how to effectively integrate mobile technologies in classroom instruction, and by focusing our efforts on improving student academic achievement in STEM to prepare our children to be globally competitive when they enter the workforce.