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DOES THE NEW 'NEW MATH' ADD UP?: NYC TEACHERS TAKE ANOTHER TACK

Some prescribe "radical math" as the cure for American students' low math performance. > *By Darise Jean-Baptiste*

Understanding the mathematical definition of the number called "e" means a lot to Alex Nunez, a senior at East Side Community High School in Manhattan. Nunez, 17, is currently taking pre-calculus and learning about limits, compound interest, "e" and graphs as a whole continuum by equation. At the end of the semester, Nunez's class will present what it learned in an exhibition in which they use the math in a real-life situation such as choosing the best bank account or the best college loan.

Natalie Suarez, 18, takes the same math class as Nunez. Suarez likes the writing portion of the exhibition because it "makes it easier for students to reinforce what they learned," she said. Distinct from standard math class, this approach, she thinks, "is a better learning system."

Called "social justice math" by some, the technique of using math to learn about political and economic issues, and using those issues to learn math, is growing in popularity among teachers who want math literacy for all and oppose high-stakes testing. Social justice teaching has provided the foundation for a number of new schools in the city, notably those founded under the New Century High Schools Initiative – a program of the public-school-reform organization New Visions for Public Schools – with alternative curriculums and assessments that focus on student-centered instruction. Although the idea that math literacy is a civil right and students can learn to use math as a way of changing the conditions in their societies through greater economic access is not new, more teachers across the nation are looking for new ways to engage their students in this essential subject in a way that seems more connected to their daily lives.

Some argue that teachers who adopt this method irresponsibly use the classroom as a means to promote their own political views. But teachers who use these methods say quality math always comes first, enabling students to make decisions about social issues based on information they derive or analyze. Pace High School Assistant Principal Taeko Onishi said social justice math "actually works better." Pace is an "empowerment school," a designation that allows for more freedom in choosing curriculum. The school was founded in 2004 with a New Visions for Public Schools grant, given in part by the Bill and Melinda Gates Foundation. Social justice math "is not only a good thing to do, but the best way to get students engaged," Onishi said.

Onishi was one of about 500 people who attended "Creating Balance in an Unjust World: Conference on Math and Social Justice," held in late April at Long Island University in Brooklyn. Students, teachers and other education professionals from 27 states converged to discuss issues around social justice math and to provide a forum for those who wanted to learn more about the various classroom approaches. Jonathan Osler, who created RadicalMath.org, helped plan the event – the first such conference – and called it a "huge success."

Alternative approaches to teaching math, such as social justice math, are being popularized at a time when 69 percent of eighth-grade students in the nation performed at what's considered the "basic" level in math and 30 percent performed at or above the "proficient" level, according to 2005 assessment results from the Nation's Report Card, published by the National Center for Education Statistics. The report said that 61 percent of high school seniors in the nation performed at the "basic" level, while 23 percent performed at or above "proficient."

Math assessment results for the city reflect a similar struggle with the subject. According to the state Education Department's "Report on the Educational Status of the State's Schools," 59 percent of city eighth-graders performed below proficiency in the 2004-2005 school year, compared to 45 percent of eighth-graders in New York State.

Osler teaches math at El Puente Academy for Peace and Justice in Brooklyn, where he has worked for six years. Although his inspiration for the Web site came from teaching at El Puente, RadicalMath.org is not directly associated with the school, he said. Osler created the web site with funding from the New York City Department of Education, which awarded him a \$3,000 grant to develop a network to share resources and best teaching practices. Partly a testament to the number of proponents of social justice math, RadicalMath.org has attracted 800,000 hits in about a year and a half, says Osler. Those who are critical of social justice teaching, however, say the approach defies the city public schools' curriculum mandates and injects radical theories into the impressionable minds of public school children.

One critic is Manhattan Institute senior fellow Sol Stern, who attended the conference. He pointed to an essay published in last summer's issue of City Journal as representative of his perspective. In "The Ed Schools Latest – and Worst – Humbug," Stern wrote, "Social justice teaching is a frivolous waste of precious school hours, grievously harmful to poor children, who start out with a disadvantage. School is the only place where they are likely to obtain the academic knowledge that could make up for the educational deprivation they suffer in their homes. The last thing they need is a wild-eyed experiment in education through social action." In this essay and other writings. Stern notes the links between some social justice teachers and Paulo Freire, the Brazilian educational theorist known for his book "Pedagogy of the Oppressed."

"I'm certainly not explicitly modeled after [Freire], although I ascribe to some of his

beliefs,” Osler said. For example, that a person can “learn how to change the conditions in life, community and society that are making them feel oppressed,” and “education should not strictly be a way that teachers control knowledge,” he said. “Education should be something that should happen in both directions.”

As part of the New York Performance Standards Consortium, Osler's school, El Puente ("The Bridge"), is one of 28 schools that receive a waiver from the state allowing them to graduate students without a math Regents exam. Osler's current class of high school seniors is working on a semester-long project where they wrote and distributed surveys – designed to use their comparative statistical analysis skills, and more – within their communities. The surveys focus on issues of displacement for reasons that ranged from gentrification, immigrant families who fled their countries of origin, or homelessness among lesbian, gay, bisexual and transgender youth. A committee of teachers grades the students' 15-page report on their survey findings, Osler said. “They [students] love it,” Osler said of the assignment. “They're proud to speak about math and using it to positively impact their communities.”

Osler's sophomore class is learning how to use the mathematical concept of "inequalities" to determine the approximate amount of funding schools would need to receive maximum graduation rates – a math unit that typically demonstrates the concept of maximum profit for businesses.

In 2006, El Puente Academy bested the citywide graduation rate of 50 percent with its own 55 percent graduation rate, and shared the citywide dropout rate of 4 percent. El Puente was named one of the city's 208 Schools of Excellence, which grants the school permission to continue designing its own curriculum, Osler added.

“My students are using math to make their lives better,” Osler said. “Not necessarily as activists but on a personal level.”

-Darise Jean-Baptiste