

**Testimony of Dolores Flanagan
Teacher, Burr School, Hartford, Connecticut
Before the
Senate Subcommittee on Education and Early Childhood Development
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Good Morning, Chairman Alexander, Senator Dodd and members of the Subcommittee on Education and Early Childhood Development. My name is Dolores Flanagan and I am a middle school math teacher at Burr School, a public school in Hartford, Connecticut. I am also a member of the Hartford Federation of Teachers/AFT. It is an honor to be here to testify on what I believe is necessary to help prepare, train and support our nation's public school math and science teachers.

I have been teaching in Hartford for the past seven years and see 125 students on a daily basis. The courses I teach include algebra, pre-algebra and preparation for the Connecticut Mastery Test, known as the CMT. I have met Connecticut's strict requirements to become a teacher and am considered highly qualified under the No Child Left Behind Act. I am proud to say that my students are meeting high standards in math and learning what they need to go on to higher-level math courses in high school. Becoming a highly qualified and successful teacher has been a rigorous and challenging journey, with many contributing key factors from the federal, state and local levels.

I was born with a love for math. This affinity for numbers became a love affair when my eighth-grade algebra teacher, Mr. Fuentes, introduced me to the Connecticut Pre-Engineering Program (CPEP). This one-of-a-kind program in Connecticut was established to encourage students at a young age to aspire to careers in the fields of mathematics, science, engineering and technology. At the time, having recently moved from Puerto Rico, I was struggling with the English language but sought refuge in my success in the pre-engineering program. That year proved pivotal after I won first place in Connecticut's statewide Bridge Building Competition. I didn't know it at the time but my interest in math was broadening. The stage for inquiry was set and I began to develop interest in engineering as well as science. I went on to win first place in the Bridge

Building Competition for a second consecutive year and became a finalist at Connecticut's Statewide Science Fair with a three-year experiment, "The Effects of Plant Hormones on Plant Growth."

I knew at that point that I wanted to become an engineer and worked very hard to achieve my goal of getting into the University of Connecticut's (UConn) engineering program. There were, however, some challenges. Although I graduated as salutatorian of my class, English was my second language and my SAT scores were merely average. Nevertheless, I was awarded approximately \$30,000 in scholarships from different agencies and foundations such as the Fox Scholar Foundation and the Society of Hispanic Women Engineers. UConn accepted me into its engineering program with one stipulation—my acceptance into the engineering program would only be considered upon my successful completion of its "Bridge" Program. Sponsored by the School of Engineering, in coordination with the Engineering Diversity Program, the Bridge Program provides a six-week intensive study of mathematics, chemistry, physics and computers. The purpose of the summer program is "to prepare underrepresented students for the engineering curriculum at UConn, present an orientation to careers in engineering and to familiarize students with the University of Connecticut and the college experience" (www.engr.uconn.edu/~edpweb/bridge/detail.html). It worked. I was part of UConn's School of Engineering for three years until I began to question my purpose in life.

I thought about how my eighth-grade teacher had challenged and inspired me to become involved and use my talents, ability and intelligence to take me to the highest levels. Mr. Fuentes was the catalyst in a long series of fortunate events. I wanted to have that kind of an effect on people, specifically children and young adults. I decided to apply to UConn's School of Education. I was admitted into UConn's IBM Program, a five-year integrated bachelor's and master's degree program. Its mission is to prepare students for the real-world challenges of teaching through courses in curriculum development, assessment and instruction, opportunities for application of knowledge such as teaching internships in both rural and urban settings, seminars, workshops,

tutoring and personal counseling. Two years later I graduated from the University of Connecticut with a master's degree in elementary education and a minor in math. I also gained a cross-endorsement in middle school mathematics.

My first teaching assignment began in August of 1999, in a Title I, K-8 school in Hartford, Connecticut. Due to the teacher shortage in the areas of math and science and that fact that I would be teaching in a Title I school, the Board of Education was able to start me at level 5 of our teachers' salary grid, when new teachers usually start at level 1. The compensation for my knowledge of math was a bonus and made the position of math teacher more attractive. Nevertheless, mentors were scarce, classrooms were overcrowded, and discipline and student achievement were areas of major concern. I thought about quitting every day for three months. It would definitely have been easier to go back to engineering where I would have made three times what I was making. Furthermore, I wouldn't have been responsible for 140 fragile teenagers who had bigger problems in their lives than worrying about math or passing the CMT. While not all engineers can be teachers, I knew that teaching was my talent and that this was not something I would walk away from. I needed help.

Thankfully, Mr. William Grupp, a veteran math teacher of 23 years, became my mentor. Having a mentor and a supportive administration allowed me to focus on what really mattered: developing my students' math skills, challenging and increasing their intelligence and motivating them to do their best. This support kept me in the classroom.

By my third year of teaching, I had produced a teaching portfolio that was ranked third in Connecticut and was used for teacher training purposes. My students had the highest gain in the mathematics component of the CMT in the city of Hartford, and I was given the Teacher of the Year award. Since then, I have become part of Hartford's Mathematics Curriculum Writing team, a Numeric Math Coach, a certified Math and Science Mentor, a member of the Hartford Mayor's Educational Task Force, an elected member of the Hartford Federation of Teachers Executive Board and a mathematics teacher portfolio scorer for Connecticut's BEST Program, the state's beginning teacher

and educator support and training program. Hartford's Board of Education, the city of Hartford and the state of Connecticut realize the importance of teacher involvement and leadership training in the area of mathematics and have shown appreciation for my experience, knowledge, time and efforts in the form of financial compensation, class release time and additional resources.

In addition, the growing focus on the importance of professional development as an instructional tool and support for teachers has been of great benefit to me. Born out of concern and the need for academic achievement in math and science, Wesleyan University began the Project to Increase Mastery in Math and Science (PIMMS). The PIMMS project is a professional development resource funded by federal grants, which offers a series of summer fellowship programs for teachers. These two-summer, multi-week institutes are designed not only to increase the participants' content knowledge but also to provide them with new strategies for teaching, including how best to use technology. The institutes also develop participants' leadership capabilities so they can share their experience and knowledge with their colleagues. The director of PIMMS, Mike Zearth, stated that the record number of grants received allowed them to conduct summer workshops for 150 elementary and middle school teachers in Hartford, just in the past year. I have been one of those fortunate teachers.

I am also looking forward to participating in a professional development program sponsored by the American Federation of Teachers (AFT) Research and Dissemination Program (ER&D). This union-sponsored, research-based professional development program, *Thinking Mathematics*, currently offers three courses for elementary school teachers and will soon add a middle school component. It is based on research, consistent with the findings of the National Research Council's *Adding It Up* report, on how children learn mathematics. It also draws on lessons from international studies such as TIMSS. As the research on how children learn math is examined, teachers discuss the implications for their classrooms and increase their own mathematical knowledge. They learn why students make common errors and the core ideas of basic arithmetic that lay foundations for higher mathematics. Comparative studies in Scranton, Pennsylvania, and

Tallahassee, Florida, have found that students of teachers who have taken *Thinking Math* outscore peers whose teachers have not.

Another wonderful professional development program being used in Hartford comes from the University of Pittsburgh's Learning Research and Development Center: Institute for Learning. The institute offers a three-year instructional leadership program to develop leadership skills to help support higher achievement for diverse student populations.

I am currently finishing my sixth-year degree in educational leadership at the University of Connecticut and have met all of Connecticut's requirements to be certified as an administrator. This certification will allow me to step into the position of Hartford district middle school math coach. The position will provide me with opportunities to reach all Hartford middle school math students by working with Hartford teachers one on one, modeling, supporting and facilitating professional development workshops. Like the city of Hartford, Hartford students are on the rise, and I am and will continue to be a part of that success.

My success as a math teacher cannot be attributed to any one thing. There have been many contributing factors in my journey as a math teacher. The journey began with a love for math, but I could not have come as far as I did without the financial aid and support of the city of Hartford, through grants and scholarships. Without those grants and scholarships I never could have gone to college. Without the city's teachers, who saw potential and challenged and motivated me, I would not be the person I am today. UConn was able to help me with the Bridge Program, which is supported through federal grants and the university. Hartford's Board of Education provided time, resources and financial compensation for increased involvement and professional development also funded by grants as well as taxpayers' money. I have also been supported financially through federal and state grants that fund programs like CPEP and the BEST program.

I urge you to take my experience into consideration. Where would students like me be without the help of federal grants and the support of federal, state and local

programs? I represent the interests of students all across America who want to succeed in math, science and engineering. More importantly, I represent those students interested in math, science and engineering who want to become teachers. Let's give them a way to get there.

The PACE bill will help efforts to recruit qualified math and science teachers into teaching, particularly in hard-to-staff schools. In addition, the bill will afford current teachers the opportunity to obtain advanced degrees in their subject areas. While these are important steps, I believe more is needed, including assistance for other teachers once they are in the classroom, such as mentoring for new teachers and support for teachers taking leadership roles. We also need to look at the issue of school infrastructure. Even the most well prepared teachers, for example, cannot provide the best possible opportunities for students to learn without adequate facilities. This is particularly true for math, science and technology. Many of our public schools, particularly in urban areas, lack the most basic physical resources, including up-to-date laboratories.

Thank you again for giving me the opportunity to share my experiences with you. I am very proud of the work I do and the success of my students. If you are ever in the Hartford area, I encourage you to come see our school in person.