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Gale A. Brewer, Borough President

Testimony to the New York City Council Committee on Education
Manhattan Borough President Gale Brewer
September 21, 2016

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I am Manhattan Borough President Gale A. Brewer. I thank Chair Dromm and the Committee on Education for scheduling this hearing on the state of Career and Technical Education (CTE) schools in New York City. Intro 1099 would require the Department of Education (DOE) to report information on CTE programs in schools and Intro 1193 would require the DOE to report information on computer science education in New York City schools.

I have long been an advocate for giving students the adequate tools to succeed in today's ever changing world. Career and Technical Education Schools do just that, emphasizing small class size, experiential learning, and skills acquisition. Further, CTE schools must offer a sequence of classes that could lead to local, state, or national certification in a given field. For example, students at Food and Finance High School get ProStart, a national certification for food workers. This is a great career-starter for all students.

There are sixteen dedicated CTE high schools in Manhattan, and I have seen students engaged as learners and acquiring field specific knowledge from industry professionals. This past January, students from Food and Finance High School catered my State of the Borough address, attended by over 600 people. Last December students from Urban Assembly Gateway School for Technology (UA Gateway) participated in Computer Science Week at Civic Hall, talking about what learning computer science has done for them, and how it has helped them think about solving some of the world's most pressing problems in new ways. We are impressed by UA Gateway's civic approach to learning and this year we are partnering with them to implement a Data Science curriculum at their school, where we will be using data available in the NYC Open Data Portal to teach students about how to solve local NYC civic problems using statistics, computer coding and mapping skills. At the Urban Assembly School for Green Careers, on the Brandeis High School campus the graduation rate has increased in the last two years, and the school recently received the "Well-Developed" rating on its Quality Review. The garden attached to the school gives students a living laboratory, where they can learn about horticulture, sustainable landscaping, wildlife habitat maintenance, storm-water retention, and urban agriculture. Their farm stand and partnership with a local restaurant, Jacob's Pickles have taught them business skills.

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It is worth mentioning though that New York City's CTE schools are highly concentrated with low-income students of color. A demographic analysis of CTE schools in Manhattan indicates that on average, 82.25% of students are on free or reduced lunch, 29.18% of students are Black and 55.3% of students are Hispanic. Parents sometimes think that CTE schools are an updated version of vocational school, and that serious academic students should avoid going to CTE programs because they are perceived as an academic step-child.

To address these questions, we need to examine the way CTE admissions are done. First, all CTE schools are limited unscreened schools. This means there are no grade requirements, and students are given preference based on if they signed in at an information session. Since 2004 the high school admissions process has become automated, where students are handed a 600+ page *Directory of Public High Schools* and asked to rank 12 schools they want to attend. Using an algorithm they are matched to one school. Because of the intricacies of the matching system, students are encouraged to include as many schools as possible, and often include schools they have no intention of attending. So each year, there is a considerable number of students in each incoming class, where students have no interest in learning about the niche field, and because principals also do not know how incoming students have ranked their school choices, they are forced to deal with students' lack of interest in the field in class, and it interferes with other students' learning. Because of the highly specialized nature of CTE programs, it is essential that principals are given some control over their incoming class. Students should be asked to express interest in their CTE field of study that goes beyond signing in at an open house.

Giving principals more control over the makeup of their incoming class will also help address the lack of diversity in CTE schools because principals can ensure they are recruiting a diverse set of learners, and are also able to share the varied academic opportunities available to all students.

We must also give CTE schools flexibility to provide intentional learning opportunities for their students. Currently, CTE schools must pay for necessary industry specific equipment repairs out of their own school budget. The Department of Education should identity targeted funding streams, so schools do not have to use their general operating budget for necessary repairs. Additionally, some flexibility must be granted in how students pursue outside learning opportunities. Last year, the Department of Education implemented a new rule that students could not travel out of borough for their College Now classes. For Food and Finance High School that has meant students can no longer take classes at Kingsborough Community College, in Brooklyn, where the college offers comprehensive culinary arts courses.

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If we are truly invested in the success of CTE schools, we must grant the schools some flexibility in how they recruit students and operate.

We are also here today to talk about Intro 1193, which would require the DOE to report information on computer science education in schools.

In today's changing economy, it is critical that our schools keep up-to-date and provide students with the tools to succeed. For years, my office has been an advocate for STEAM in schools. This doesn't just mean putting computers in classrooms – it means building pipelines to ensure that students can take coursework that will help them understand and shape the world they're inheriting from us. In New York City, because of the Computer Science for All Initiative, we are making some strides that ensure every child has access to statistics and computer science courses.

We also need to ensure that we have teachers who have the content knowledge to teach these courses. In New York City, out of the 75,000 public school teachers, less than 100 teach computer science, largely because currently there is no state recognized computer science certification, and teachers who are teaching computer science courses are primarily math or science teachers who have taught themselves computer science. I know Hunter College is working on creating a computer science certification both for new teachers and career professionals, but we must address the numbers problem, and incentivize new teachers to pursue this computer science certification.

I join Hunter College in urging the State Department of Education to grant state certification for Computer Science teachers, so they can be hired at DOE.

Another hurdle that CTE schools face is the arduous state approval process. Developed in 2001, it takes from four to six years for programs to get approved at the state level. Careers in technology are evolving, and with newly emerging fields like data science- it is important that our schools are incentivized rather than face hurdles to keep up. The CTE approval process must be streamlined and sped up.

One gap I see in Intro 1193 that I would like to see added is information on the bandwidth capacity available at each school. From my visits, I know that schools need access to fast bandwidth, and access to faster connections to the internet in the classroom. Web based resources are essential to both students and teachers, and are an integral component in CS lesson plans- which must then be altered due to connectivity issues, disrupting the students' focus and understanding of the curriculum.

Though this is a widely discussed problem, there does not seem to be an accurate and consistent measure of bandwidth speed. Bandwidth data provided to me last year by the

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DOE for schools that I had given capital funds to show that most schools have bandwidth provisions between 10-40 Mbps, which is horribly slow.

These bandwidth speed numbers at the schools do not match what was listed in the Smart Schools Bond Act Investment Plan that was brought before the Panel on Education Policy earlier this year. The investment plan shows schools' burstable speed instead of dedicated bandwidth. Listing a school's burstable speed is a misleading metric, since it is a speed most schools will never achieve. In order for us to address the bandwidth speed in our schools and classrooms, it is of utmost importance that we obtain a clear picture of what the current reality is. We must understand why these discrepancies exist and figure out how to achieve the most consistent speed measures before allocating programmatic, technology and infrastructure spending to specific schools.

I conclude by thanking the Committee for scheduling this hearing on CTE schools and on the state of computer science in New York City public schools.