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Preparing Today's Students for Tomorrow's Jobs: A Discussion on Career and Technical Education and Training Programs

Chairman Rokita, Congressman Grijalva, and members of the subcommittee, thank you for inviting me here today to discuss career and technical education and training programs. My name is Sheila Harrity and I am the proud principal of Worcester Technical High School in Worcester, Massachusetts. I also just received the huge honor of being selected as the 2014 MetLife/NASSP National High School Principal of the Year and would like to speak on behalf of my fellow middle and high school leaders.

Worcester, Massachusetts is the second largest city in New England. Worcester Technical High School is the largest of seven high schools in the City of Worcester. It has 1400 students in 24 technical programs within four small learning communities. The demographics of Worcester Tech consist of: 53% female, 47% male, 63% qualify for free or reduced lunch, 19% are special needs, ethnic backgrounds reflect the city demographics. Worcester Technical High School has met Adequate Yearly Progress (AYP) for "No Child Left Behind" for five out of the past six years. We exceeded our benchmarks in English, mathematics, and every sub-group. In 2012 and 2013 WTHS also met the Progress and Performance Index (PPI) both in the Annual PPI and the Cumulative PPI.

In the past seven (7) years at Worcester Technical High School, students' Massachusetts Comprehensive Assessment System (MCAS) exam scores have risen significantly. In English Language Arts, 92% of the students scored in the advanced/proficient categories, an increase of 65%, with a less than 1% failure rate. In mathematics, 84% of the students scored in the advanced/proficient categories, an increase of 49%, with a 2% failure rate. In science, 96% of the current 10^{th} and 11^{th} grade students passed with a 4% failure rate. Presently, the Class of 2012 has a 96.4% four year graduation rate with a 1.5% drop out rate.

Massachusetts, as well as other states in our nation, has seen increasing achievement gaps between white students and minority students. At WTHS, the achievement gap has decreased significantly and in some subgroups is non-existent. From 2006-2013, Hispanic students had a 65% gain in ELA and a 49% increase in math. Low-income students showed a 64% gain in ELA and a 50% increase in math. In addition, black students had a 48% gain in ELA and a 32% increase in math.

Recognizing the need for Advanced Placement classes for the students at our school, administration applied for, and was accepted in a grant program associated with the National Math and Science Initiative. The Massachusetts chapter, Mass Insight, helps provide inner city schools with funds for books and supplies, professional development, and student support in an effort to help close the achievement and access gap for many underserved students in the inner city. In 2008, Worcester Tech began the school's entry into Advanced Placement with AP Biology. The school now offers AP Language, AP Literature, AP Statistics, AP Computer

Science, AP Environmental Science, AP Physics and AP Calculus. In the past 4 years, Worcester Technical High School has increased student enrollment from 18 students to 183.

Students are prepared for success with a rigorous curriculum that combines academics with hands-on experience, in school and in the workplace, through internships and cooperative education opportunities. They graduate with all academic requirements and with industry-recognized national certifications. Worcester Technical High School graduates are graduating college and career ready. The profile of the 2013 graduates is: 82% went on to higher education, 13% went directly into the world of work, and 2% joined the military.

Guiding the school, WTHS has over 350 industry advisors that contribute to the direction and success of the school and its students. These 350 individuals create both the General Advisory Board and the Program Advisory Committees. The Program Advisory Committees are established for each approved technical program and meet to review the curriculum, equipment, internships/co-ops, and career trends of the respective programs. The program advisory committees consist of representatives of local business and industry related to the program, organized labor, postsecondary institutions, parents/guardians, students, and representatives from registered apprenticeship programs, if applicable. The program advisory committees are integral partners in the provision of a truly college-career ready curriculum. They are the front lines for the industries that they represent. They provide direction to the programs as to the trends in their fields in regards to training, equipment, certifications, licensure, education, and careers. The technical instructors work diligently to both lead the committees and incorporate recommendations.

Each technical program is working towards providing industry recognized credentials as well as college credits to expand each student's opportunities for post secondary success. Two specific examples are: in Allied Health students are graduating with a high school diploma, a certificate in Allied Health, certification in CPR/First Aid, Certified Nursing Assistant (CNA), Home Health Aid, and EMT, which earns them seven college credits; in Information Technology programs students are graduating with up to 18 college credits from Northeastern University, as well as being certified in A+ and as a Certified Cisco Networking Associate (CCNA).

With the assistance of business and higher education partners, entrustments are created to keep the schools' technical programs outfitted with state of the art equipment. Entrustments are mutually beneficial. The school receives new equipment at reduced or no cost while the sponsor benefits by having students trained on their newest equipment. As students enter the workforce, graduates will be skilled at using the sponsors' latest tools and technology, and be more likely to use those tools and products on the job. Also, businesses can use the facility to train their employees or demo their products for potential customers. For example, the Graphics Department has an entrustment with Océ. The partnership has created a cutting edge, advanced technology learning center for graphic arts. Through this partnership the school received over a million dollars in equipment and technology and is the print shop for the entire City of Worcester. The Automotive Technology Department is called the Harr-Toyota Service Center due to the generous donation from Harr-Toyota. Their $100,000.00 donation has allowed us to create a 16 bay service center furnished and equipped with new state of the art automotive technology. This department services over 250 vehicles per month. Worcester Tech has also partnered with L'Oreal Redken to feature a full service beauty salon and day spa. The Worcester

Credit Union was approached during the construction phase to provide a full service bank in the school. The Finance and Marketing students are employed, during the school day, to be the bank tellers. Since 2006, the bank has trained over 80 bank tellers for Central Massachusetts' needs.

Worcester Technical High School is committed to building partnerships with local two and four year colleges and universities. A successful example of these partnerships is the *Tufts at Tech* animal clinic that was created by a school partnership with Tufts University to provide affordable animal care for low-income families in the Worcester area. Tufts University funds a veterinarian to run the clinic and WTHS students work alongside providing animal care. The clinic services over 250 animals per month and charges 75% less than what a regular vet would charge. Teachers created authentic learning experiences in all facets of this partnership. The carpentry, plumbing, and electrical students built the veterinary clinic. The graphic students created the name and designed the logo and brochures and the painting and design students created the signage.

Community

Worcester Technical High School is committed to giving back to the community. Some examples include: at Green Hill Park, adjacent to our school, students have built the club house for the golf course with the Construction Academy, assisted in maintaining the barn yard zoo with the Veterinary Assisting Program, and provided land maintenance and water testing with the Environmental Tech Program. Students have refurbished several condemned multi-family homes within the city. They have also built a multi-family LEED certified house, from the ground up, for low-income Worcester residents. In addition, the students and staff designed and fabricated over 250 holiday wreaths that adorn downtown during the holiday season. This has brought great pride to our citizens and students alike.

STEM Focus

Two years ago, Worcester Technical High School became a STEM Career and College Innovation School. Innovation Schools are schools that operate with more autonomy and flexibility with staffing, professional development, policies and curriculum. Innovation Schools implement innovative strategies to improve student performance while maintaining their public school funding. Worcester Technical High School, under the Innovation School legislation, has a focus on STEM (Science, Technology, Engineering, and Math) education where students are taught an integrated curriculum which will help them to obtain STEM jobs upon graduation or study STEM related fields in college. With this 21st century focus, WTHS is training students to meet the employment demands of the area's growing biomedical, technology, and manufacturing industries. These partnerships will keep jobs in Worcester for another 100 years and keep our city/region strong and viable.

An example of a STEM project with higher education partnerships is the Solatrium, a modular, zero-energy home that competed in the US Department of Energy's Solar Decathlon which was held in Datong, China this past summer. Through working with post secondary linkages and area business/industry, the manufacturing and construction programs at WTHS partnered with one of 23 teams selected to compete in China. The collegiate team composed of engineering students from Worcester Polytechnic Institute, U.S.; Polytechnic Institute of New York University, U.S.;

and Ghent University, Belgium, designed the home but needed assistance and expertise with the construction phase. WTHS instructors from plumbing, electrical, HVAC/R, machining, and welding stepped forward to lead their students in completing this state-of-the-art, green construction project on schedule. The modular home was built locally, tested, and then disassembled for shipment to China. Through the generosity of business/industry, six WTHS students and two instructors accompanied the team to China for reassembly and participated in the competition. Through the leadership efforts of the instructors at WTHS, inner-city students in an urban public school worked alongside elite engineering students to develop and hone their skills on the latest technologies in their respective trades and saw the fruit of their labor in a truly once-in-a-lifetime global cultural experience.

In addition, with the help and support of our local community college and business sector donations, WTHS's Robotics Team competed in local and regional competitions which qualified the team to compete in the Vex World Championship competition in Anaheim, California last April. The WTHS Vex Robotics Team competed against 426 teams representing 24 different countries and won the Vex Robotics World Championship.

Successful technical schools require strong links to the community, business and industry, and academic institutions. The school's success and the city's/region's success are intertwined. WTHS is part of the economic engine, coordinating the needs and desires of industry for a highly-trained, adaptable workforce with the needs and desires of our students to secure good paying, rewarding jobs in the fields of their choice.

Background

Worcester Technical High School has been in existence since 1910. It is one of the first vocational schools built in the United States. Through the decades the facility became antiquated, the infrastructure incapable of being updated, and the equipment to train students was obsolete. In 1997, the New England Association of Schools and Colleges' Commission voted unanimously that the school be placed on probation for failure to meet the Commission's Standard 10 on School Facilities. In addition to an aging facility, Worcester Technical High School was the lowest performing high school in the city and one of the lowest performing vocational/technical schools in the state. In 2000, 97% of the students scored in the Needs Improvement and Failing Categories of the ELA MCAS exams, with 76% of these in the Failing Category. On the MCAS mathematics exams, 97% scored in the Needs Improvement and Failing Categories, with 85% of these students in the Failing Category. Students were not graduating career or college ready.

The business community, state and local officials, educational, and community leaders, and parents came together to support, fund, and design a new $90 million, state of the art vocational/technical facility. Worcester Technical High School is designed using the small learning community model. Funding from the Carnegie Foundation Planning Grant and a federally funded Small Learning Community Implementation Grant allowed our large high school of twenty-four technical programs to divide into four small learning communities (SLCs). This model provided a personalized learning community that supported all students, both academically and technically. It also fostered integrated academics, project based learning by

incorporating real world applications, and engaging students in their learning to properly prepare them for career and college.

Awards

In 2006, *School Planning and Management Magazine* awarded our school the Impact on Learning Award in the category of non-traditional learning space. In 2009, WTHS was selected as one of 15 public high schools featured in *How High Schools Become Exemplary* by the Achievement Gap Initiative at Harvard University. In 2011, the National Association of Secondary School Principals (NASSP) selected WTHS as a MetLife Foundation-NASSP Breakthrough School. This national award is presented to five high schools and five middle schools across the country, and WTHS was the only high school selected in New England. The award recognizes schools achieving outstanding student gains in high poverty areas. I was one of two Breakthrough School award recipient principals (one middle and one high school) invited to present at a congressional briefing sponsored by the NASSP and the Alliance for Excellent Education Event at an event in May 2011. In 2012 and 2013, my school was selected as a Breaking Ranks Showcase School at the NASSP National Conferences. In 2013, I was selected as the Massachusetts Principal of the Year and as I already mentioned, just last week I was selected as the 2014 MetLife/NASSP National High School Principal of the Year.

The Role of the Principal

When I had the good fortune to be hired to open the new WTHS in 2004, I brought a unique combination of experience, knowledge, and skills with me. The success of our school is the result of many factors, and my contributions are squarely connected to my prior work and experience. The success of our school is the result of our redefining the role of vocational/technical education. In doing so, we have emphasized academic standards, teamwork, and motivation.

My background in a suburban high school prompted me to develop programs with extensive college preparatory experiences for students and to hold them accountable to high academic standards. The technical components of our vocational programs provided an opportunity to make rigorous programming relevant.

All important decisions at WTHS are made by the instructional leadership team, which includes me, the assistant principals, the vocational/technical director, and the department heads in the academic and technical areas. Our team works together to identify focused goals and targeted professional development and to develop a school culture that is marked by high expectations for teachers and students. Our team also makes every effort to coordinate professional development on the basis of intensive analysis of student data. Faculty members use that analysis to develop targeted interventions for students and respond to the high expectations of our school culture by becoming and remaining experts in their content fields.

NASSP and our members strongly support the Carl D. Perkins Career and Technical Education Act, which we feel has great potential to promote a personalized learning environment for each student through strong curriculum and instruction, and will increase student achievement through integrated academic and CTE programs. As we think about the law's reauthorization, we hope

that the committee will stay focused on the program's ability to: 1) prepare all students for postsecondary education and work opportunities; 2) support and enhance academic achievement and technical literacy; and, 3) improve high schools to ensure higher student achievement and graduation for all students.