



# Goodbye *to the* VOC-ED STEREOTYPE

Advances in career technical education prove the merits of combining hands and minds

BY MICHAEL F. FITZPATRICK

Frank Denecke didn't grow up thinking he would become an electrical engineer one day — much less go off to college and earn an advanced degree. He was an immigrant whose Indonesian-born parents hadn't advanced beyond high school. What expanded his horizons, Denecke says, was the electronics program he attended at Blackstone Valley Tech High School in south-central Massachusetts.

At the career technical secondary school, Denecke's electronics teachers spoke of the oppor-

tunities that college would offer. His instructors provided a strong technical base in electronics and instrumentation that enabled him to succeed at a co-op job with a local firm. That work helped support him during four years of college and led to a full-time position after graduation. He's since earned a master's degree in electrical engineering and worked his way up in fewer than 10 years to project management for an S&P 500 company.

Denecke's account is one of many success stories that have their origins at vocational technical systems across the country. Clearly, it does not fit the stereotype that voc-tech education is merely an alternative educational path for students with limited academic success who simply need to acquire basic trade skills.

**Mikaela Johnson, a graduate of the health services program at Blackstone Valley Vocational Regional School District in Upton, Mass., works as a nurse.**

### Delayed Appreciation

Mikaela Johnson's story doesn't fit the common stereotype either.

"I have always wanted to be a nurse, for as long as I can remember. I chose to go to a vocational high school because I felt it would give me a head start when I went off to nursing school," says Johnson, who graduated from Blackstone Valley's health services program in 2007 and then earned a bachelor's degree in nursing.

Her high school's health services shop prepared Johnson in ways she didn't fully recognize or appreciate while she was enrolled. "I learned so many skills that are vital to my success as a nurse," she says. "I was forced to think critically and use my resources to find answers. I was encouraged to take responsibility for my own education. My classmates and I were taught to work as a team. We learned professionalism and the importance of respect. Our teachers believed we were capable young adults and

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treated us as such. They had high expectations and made us eager to reach them."

Johnson now is employed as a registered nurse in the cardiac care unit of an area medical center. She is furthering her education in graduate school, working to become an advanced nurse practitioner.

### A Launching Point

Jim Chase, a 1981 graduate of Blackstone Valley's manufacturing program, entered vocational education along stereotypical lines. He had struggled academically and socially in the local public schools he attended.

When Chase came to the high school's career and technical program as a transfer student, he carried with him a great deal of unchanneled anger due to family upheaval. "(This) was an opportunity for me to have a fresh start and to convert my negative energy into something positive," he says. "The metal fabrication shop at BVT is where I experienced my first successes, which helped to build strong self-esteem and taught me that hard work can deliver results."

He has delivered professionally over a 30-year career in manufacturing. Starting as a welder and moving through a variety of manufacturing jobs, ranging from drafting to sales and marketing, Chase is now president and founder of five successful joint ventures for manufacturing and product distribution companies with national and international connections.

### Grounded in Relevancy

Frank, Mikaela and Jim are successful not because they completed career and technical courses in high school, but because they had an education that provided them with the essential tools for living productive lives in a fast-paced and constantly evolving world.

As a career and technical educator for more than 40 years, I often am asked about the mission of career and technical education in the technology-driven global society of the 21st century. Those of us who are educators at the secondary school level long have understood the value of using the world of work to engage and motivate students. Trying to make someone learn what he or she doesn't want to learn can be a frustrating endeavor. Unless the subject matter is actually used in real life, the student quickly forgets what has been taught. Long-lasting learning occurs when a student is interested in the subject and can see the connection to his or her

**Electrical engineer Frank Denecke, an alumnus of Blackstone Valley's electronics program, handles project management for an S&P 500 company.**

**Jim Chase, who studied manufacturing at Blackstone Valley Vocational Regional School District, is president of a firm involved in manufacturing and product distribution.**

future life.

Vocational technical teaching, which is grounded in preparation for specific careers, serves as a fulcrum between learning and real work. It is individualized, realistic and relevant — and appeals to a large and diverse group of high school students.

As technology has advanced in rapid-fire progression, vocational technical educators have seen their fields of expertise become more sophisticated, resulting in stricter hiring and performance standards and credential requirements. Virtually every workplace now establishes quality standards for its employees. Nurses, HVAC technicians, cosmetologists, electricians, airline pilots, accountants, automobile mechanics, lawyers, physicians and teachers all require certifications and/or licenses. Some of these credentials are national, and others are state-specific, but all require an established level of proficiency and an ability to communicate that proficiency effectively.

While vocational educators still must focus on teaching the specific skills required for a particular career path, they also must provide a more rigorous course of academic preparation to enable students to meet the higher standards awaiting them in the workplace.

### **Advanced Skills**

In today's complex global society, every student, whether pursuing a traditional education path or opting for career training by way of a CTE system, must be equipped with a set of basic skills that is far more sophisticated and advanced than that required in the manufacturing-based economy of 50 years ago. Gainful employment today requires teaming, communication and technological skills like never before. As new information, communication and media technologies connect people, ideas and data across the world simultaneously, workers must function effectively in international and cross-cultural situations.

At Blackstone Valley Tech, we are training students for careers they will enter in four to eight years — careers that undoubtedly encompass emerging technologies. Our students need to be equipped to quickly grasp the innovations that will affect their



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careers during the intervening years and into the future. Therefore, we must acknowledge a new role for career and technical education in our public schools, a role that prepares students for lifelong learning.

Effective vocational technical training focuses on providing college, business and industry with candidates who are capable of meeting today's demands and tomorrow's challenges. While not all students choose to enroll in higher education directly after high school, most graduates ultimately conclude that some postsecondary education is the key to a better life for themselves and their families. Public education, including CTE, must guarantee that students who enlist in the armed services or go straight to work are equipped with the academic preparation to resume formal education at some later date.

Academic learning is reinforced in the best vocational technical schools through across-the-curriculum approaches to reading, writing and mathematics. In these schools, academic teachers routinely coordinate lesson plans with shop instructors, using subject matter related to students' career fields to reinforce academic concepts. A math teacher will



**Michael Fitzpatrick, superintendent of Blackstone Valley Vocational Regional School District in Upton, Mass., checks in with a student.**

use food measurements to teach math concepts to students who plan careers in the food service industry. Social studies lessons on the industrial revolution are correlated with welding and manufacturing technologies instruction. Students preparing for careers in the painting and design field may be asked to write descriptions of painting techniques in English classes.

### **Evolving Curriculum**

While more rigorous academic learning is now commonplace in vocational technical schools, changes also are unfolding in career technical shops. Where graphic communications programs once prepared students to run a printing press, new multimedia communications curricula emphasize design and messaging far beyond the traditional print environment. Students learn to communicate their ideas across a wide range of platforms and media while becoming familiar with graphic design, video design and production, website design and content development.

Electronics, manufacturing and drafting programs have been similarly updated to include an introduction to engineering principles. As assembly-line jobs have disappeared or have been outsourced to low-wage countries, entry-level employment in these fields now calls for a basic foundation in engineering and familiarity with the latest hardware and software used in computer-aided workplace settings.

With computerized diagnostic systems in cars and sophisticated security and climate controls in homes, even the more traditional automotive and construction trades now require workers versed

in computer applications who can adapt to new technologies. Today's HVAC students must be able to do precise scientific calculations to earn refrigerant certifications from the Environmental Protection Agency, auto body trainees practice their spray painting skills using virtual simulations, and electrical students have to understand blueprint specifications and code for a wide variety of integrated power-using systems.

To ensure students are learning on the right tools and preparing for the jobs that exist today, our schools must reinforce existing relationships and build new partnerships with the local business and industry that will hire our graduates. At Blackstone Valley, some 300 area business people meet regularly with shop teachers to provide real-world input into what is being taught in career programs. Ongoing feedback from our General Advisory Committee ensures that learning is relevant to workforce demands and that materials and equipment in the voc-tech classroom reflect today's workplace.

### **Hands and Minds**

While the trade school of the 20th century offered few extracurricular opportunities, we now recognize the power of extracurricular activities to engage students and broaden their horizons. Sports, student government, the arts and technical skill competitions shape a student's perception of the role of a responsible citizen. Activities that encourage community service, entrepreneurship, healthy competition and teamwork build a positive self-image and allow students to envision a successful future. Similarly, activities that promote leadership skills, an important trait in the new global workforce, are integral to the CTE mission.

Have career and technical systems lost sight of their mission? Is the investment in vocational technical education no longer paying the dividends it did when carpenters, machinists and auto mechanics graduated from high school and became immediate, productive additions to the local workforce? I don't think so.

Those of us who work in the field have seen the gradually increasing demands of the information-age workplace and have embraced new approaches to better serve the needs of our students. The occupational experiences of Frank Denecke, Mikaela Johnson and Jim Chase, or any other career and technical high school graduate, provide testimony of the success of an education that puts hands and minds to work together. ■

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