

# Hands-On Achievement

## Why Massachusetts Vocational Technical Schools Have Low Dropout Rates

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No. 96  
January  
2013

*A Pioneer Institute White Paper*


*by Alison L. Fraser with William Donovan*





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Pioneer Institute is an independent, non-partisan, privately funded research organization that seeks to improve the quality of life in Massachusetts through civic discourse and intellectually rigorous, data-driven public policy solutions based on free market principles, individual liberty and responsibility, and the ideal of effective, limited and accountable government.

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# **Hands-On Achievement Why Massachusetts Vocational Technical Schools Have Low Dropout Rates**

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**Alison L. Fraser**

**William Donovan**

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**Introduction**

More than one million students drop out of high school in the United States each year, setting them on courses of lost income, diminished health, and increased odds of incarceration.<sup>1</sup> Collectively, their decision costs the nation hundreds of billions of dollars in lost revenue, lower economic activity and increased need for social services.<sup>2</sup>

It is an epidemic in education that has been treated with an array of remedies at the federal, state and local level. But just as the mysteries of some physical diseases have stymied a cure, the myriad causes of students leaving school without a high school diploma – lack of interest, the need to support themselves and family, failing grades, family problems - have prevented educators and policymakers from solving the dropout crisis.

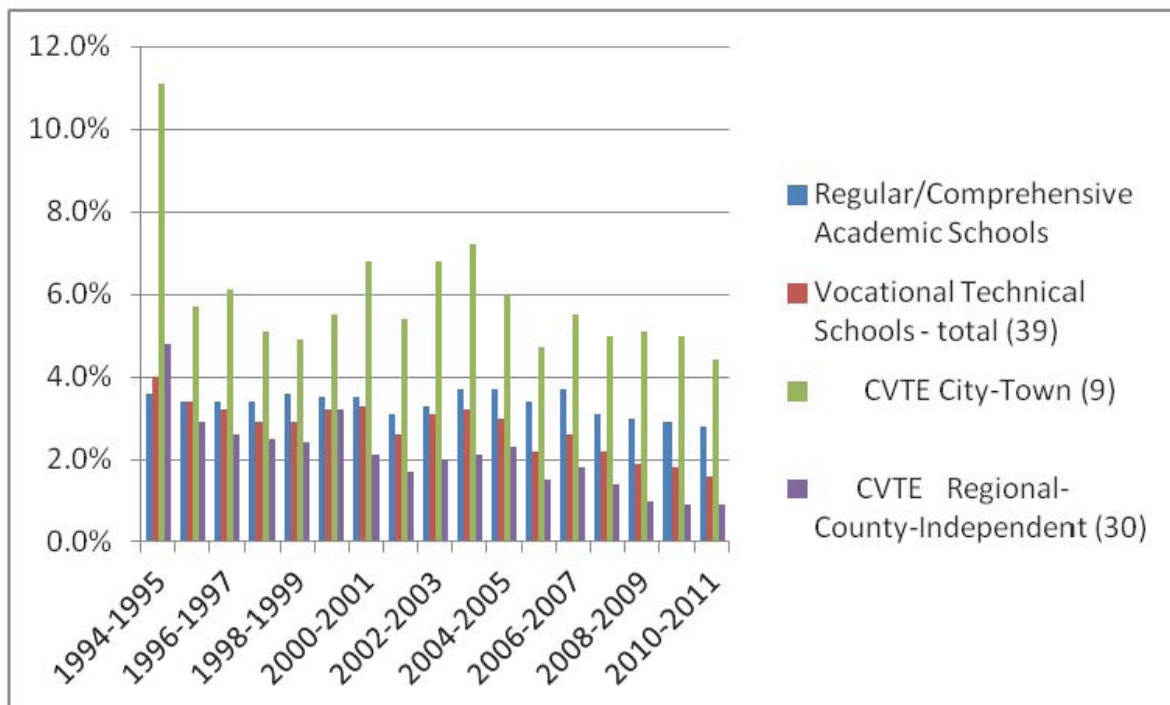
Gains have been made, however; across the country studies have found that career vocational technical education (CVTE),

which prepares students in academics, as well as for careers in trades and technical areas, appeals to students across the spectrum, including those in danger of not earning a high school diploma. By demonstrating the practical uses of abstract concepts, CVTE answers the ancient teenage lament: “Why am I learning this?”

In Massachusetts, where an average of 10,000 high school students have dropped out of school annually over each of the past 10 years,<sup>3</sup> the state’s vocational-technical high school network has been particularly effective at keeping students in school. The statewide dropout rate at regular/comprehensive high schools averaged 2.8 percent in 2011, but was only 1.6 percent among the 39 VTE schools and averaged a mere 0.9 percent among *regional CVTE* schools.<sup>4</sup>

Superintendents and principals say a mix of academic choice, applied learning, intense mentor relationships, and high expectations

**Figure 1: Annual Dropout Rates by School Type**



Source: Massachusetts Department of Elementary & Secondary Education

have kept their dropout counts down, despite generally having student populations that have larger percentages of special needs students than the state high school average.

Once considered trade schools for students who planned to work with their hands and not pursue further education, today's career vocational technical schools are well-rounded academic centers that combine rigorous conceptual class work with practical application. Majors in robotics, biotechnology and engineering technology are offered alongside traditional trade programs such as carpentry and plumbing. Students are also prepared for higher education: More than 60 percent<sup>5</sup> of the Commonwealth's CVTE students go on to post-secondary education; and even more attend post-secondary training through lifelong learning and professional development associated with their careers.

"Today there is writing across the curriculum in every vocational program," says David Ferreira, executive director of the Massachusetts Association of Vocational Administrators (MAVA). "We're building academic competencies and using the training in the vocational area as the way to get students engaged and excited."<sup>6</sup>

The 1906 founding document for vocational technical education in Massachusetts recognized the necessity for both technical knowledge and skills to address the needs of industry and the individual. This document provided the blueprint for the country to deal with increasing industrial technology and the ineffectiveness of public education in retaining its students.<sup>7</sup> Because Massachusetts CVTE has remained true to these principles, it is different from that in most other states. In the Bay State, literally

half of a student's time is spent in their occupational or trade area, alternating a full week of career education with a week of rigorous academics.

In other regions of the country, vocational-technical schools may run a six-period day with one block of the day being a course called "shop," which is considered the students' major. Other northern states are closer to an elective model: New York's vocational education system, for instance, places the student in shop for just half a day at a time. Many states have CVTE systems based on a system of career centers to which interested career-tech students are transported for training.

Whatever approach is taken to impart career vocational technical education, the benefits have been increasingly recognized across the country. During the past 15 years, studies have noted vocational technical education's success in discouraging students from leaving school before graduation. A 1998 report by the University of Michigan found that high-risk students are eight to 10 times less likely to drop out in the 11th and 12th grades if they enroll in a career technical education program instead of a general program. The report also stated that a quality career vocational technical education could lower a school's dropout rate by as much as 6 percent. Importantly, it also found that vocational education students are less likely than students at a comprehensive high school to fail a course or to be absent.<sup>8</sup>

In 2005, the National Research Center for Career and Technical Education reported that students entering high school at a typical or younger age had a decreased risk of dropping out of high school as they added vocational technical courses to their curriculum.

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The report suggests that a combination of vocational technical education and academic courses can lower the dropout rate as students are exposed to a broader range of experiences and can more easily envision careers in their futures.<sup>9</sup>

In a 2007 brief, the Association for Career and Technical Advancement cited five potential benefits of career and technical education to at-risk students. They included “enhancement of students’ motivation and academic achievement; increased personal and social competence related to work in general; a broad understanding of an occupation or industry; career exploration and planning; and acquisition of knowledge or skills related to employment in particular occupations or more generic work competencies.”<sup>10</sup>

### How Vocational Technical Education Works

As their name implies, the major difference between CVTE schools and comprehensive high schools is the emphasis on vocational training. While many traditional high schools offer vocational technical course electives, at CVTE schools, students receive in-depth training in majors such as electronics, construction, medical assisting, or biotechnology. Typically, they spend the first half of their freshman year exploring up to ten career and technical majors offered at their school. They then select the ones that most interest them and, through a rubric system, are matched with a vocational-technical laboratory, or “shop.” Over the next three and a half years, students proceed on an alternating schedule. One full week is spent in shop focusing on their chosen vocation, the next week in traditional academic classes. This is a proven approach that keeps students absorbed in school by connecting

abstract classroom concepts with hands-on practical application.

“Vocational education provides us the opportunity to teach academic skills, math and science in particular, in a real life situation,” says MAVA’s Ferreira, “To put up rafters on the roof of a house, for example, utilizes fundamentals of trigonometry. They see the relationship between the academic and the physical skills needed to build a house and put a roof on.”<sup>11</sup>

The alternating schedule and concentrated major also causes students to work closely with the same teachers for over three and a half years. Teachers at vocational-technical schools must be licensed by the Massachusetts Department of Elementary and Secondary Education (DESE). Additionally, they are required to have three-to-five years of professional experience in the field in which they are licensed. Unlike teachers at comprehensive high schools, whose contact with students is limited to a class period and perhaps after-school programs, CVTE teachers are with 10 to 15 students all day for a week. These adults develop mentoring roles and are alert to subtle changes that may signal the beginning of an issue that could cause a student to drop out of school.

“The instructors are our eyes and ears,” says Sheila Harrity, principal of Worcester Technical High School. “When a student goes into crisis or has a problem, they are the ones who hear of it first hand and are able to assist or redirect the student.”<sup>12</sup>

Vocational technical school officials say their attendance expectations of students play a role in their low dropout levels. Students learn their skills through repetition that can only be practiced at school. Students know

that without putting in their “time on task” in school they’ll be ill prepared when they work with an employer. In a 2006 survey, Massachusetts industry professionals generally agreed that CVTE graduates are better prepared for post-high school life than most college-preparatory graduates, not only because of the hard skills but also because of the workplace skills and work ethic they have already developed.<sup>13</sup>

“You need to engage and involve children in their education, particularly at the high school level,” says Charles Lyons, superintendent of Shawsheen Valley Technical High School in Billerica, MA. “If you do that and get them to come to school, you have incredible results.”<sup>14</sup>

### **Inside the Dropout Numbers**

The Massachusetts Department of Elementary & Secondary Education defines a dropout as “those students who dropped out of school between July 1 and June 30 of a given year and who did not return to school, graduate, or receive a GED by the following October 1.” The annual dropout rate is calculated by dividing the number of students who drop out over a one-year period by the October 1 grade 9–12 enrollment, multiplied by 100.<sup>15</sup>

Prior to the 1992-1993 school year, DESE reported an “unadjusted” dropout rate, which did not account for students who left school but returned by the following October 1. From that year through the 1994-1995 school year, DESE published an unadjusted rate and an adjusted rate developed by the U.S. Department of Education. The adjusted rate *partially* accounted for those returning students. Beginning in the 1995-1996 school year, DESE reported only an adjusted rate.

That meant its annual figures would no longer be comparable to data for years prior to 1993, when the state only reported an unadjusted figure.

An additional reporting change came in 2002-2003 when, for the first time, the dropout rate was based on student-level data submitted by districts through the Student Information Management System (SIMS), “a student-level data collection system that allows the Department to collect and analyze more accurate and comprehensive information (and), to meet federal and state reporting requirements.”<sup>16</sup> Prior to the 2001-02 school year, dropout figures had been reported by districts in aggregate form in the Year-End School Indicator Report.

Another significant change occurred in the 2005-2006 school year, when DESE began to cross-reference SIMS data with the General Educational Development (GED) Testing Service database. This enabled DESE more accurately to track students who drop out of high school but subsequently earn a GED, thereby decreasing the number of students considered dropouts in the final count.

Since the 1995-1996 school year, when the dropout rate for both vocational technical schools and regular/comprehensive high schools was 3.4 percent, CVTE schools have consistently posted lower dropout rates of at least a full percentage point.

While the average dropout rate for comprehensive high schools was 2.8 percent in the 2010-2011 school year, among vocational technical schools the rate ranged from zero to a high of 2.1 percent among regional CVTE schools. Essex Agricultural and Technical High School in Hathorne, MA and North Shore Technical High School in Middleton,

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MA— two schools that are merging and will open as a new school in 2014—had zero dropouts in the 2010-2011 school year. Whittier Regional Vocational Technical High School in Haverhill, with an enrollment of 1,251 students, had just two dropouts. Shawsheen Valley Vocational Technical High School in Billerica, enrollment 1,324, had only three dropouts.

These exemplary numbers were posted by regional CVTE schools while working with more at-risk students than in comprehensive high schools. Though the average percentage of special needs students in Massachusetts is 17 percent, the average percentage of students with special needs in the regional vocational schools is 24 percent. Four schools have greater than 37 percent of their students on IEP's, ranging up to 41 percent special needs students at Minuteman Regional Vocational Technical High School in Lexington. Still, the graduation rate of special needs students at vocational schools is almost 20 percentage points higher: 82 percent vs. 62.8 percent.<sup>17</sup>

There is a difference in the dropout rates of the 27 regional CVTE schools in the Commonwealth vs. the nine urban district-run CVTE schools. Regional CVTE schools averaged a remarkable 0.9 percent dropout rate in 2010-2011, while the rate for city-run vocational-technical schools was 4.4 percent. That city school rate was the lowest posted in the past 17 years, but the gap between the two groups of schools has been fairly consistent during that period.

While the range of dropout rates is fairly narrow among the regional vocational-technical schools, among urban, district-run schools, it is far broader. The William J. Dean Technical High School in Holyoke had a dropout rate of 15.2 percent in 2010-2011, while the Leominster High School & Center for Technical Education had rates of 0.6 percent. More typical are the Putnam Vocational Technical School in Springfield, recording a 6.7 percent rate and Lynn Vocational Technical Institute, at 4.6 percent for the 2010-2011 school year.

In some cases, the dropout rate has remained stubbornly high. Dean's has ranged from a low of 9.5 percent in the 2001-2002 school year to a high of 16.1 percent in the 2007-2008 school year, according to Massachusetts DESE data. Others are driving their numbers down. Since the 2006-2007 school year, the dropout rate for Madison Park High School in Boston has plunged from 9.4 percent to 5.3 percent in 2010-2011.

Certainly, demographics are one reason why there is a difference in rates between regional and urban district CVTE schools. One city school principal said the dropout rates in cities can be higher than in the suburbs because there is a larger immigrant population and the possibility of more students leaving school to return to their native lands.

Ferreira also thinks that some cities have been slower to recognize the new role that vocational technical schools are playing. "Some of it has to do with the nature of being

**Table 1: Percentage of Special Needs Students and Graduation Rates**

	<b>% Special Needs</b>	<b>Special Needs Students' Graduation Rate</b>
State Average	17%	62.8%
Regional Vocational Schools	24%	82%



a city school as opposed to being in a regional school district and the way a city might look upon the role of the vocational school,” he says. “I think there has been a slower change to recognize that it is no longer a place to put kids who are not pursuing college or who tend toward more physical labor.”<sup>18</sup> Though every CVTE school is engaging its students through applied learning – combining classroom lessons with practical experience – each school is different and their stories are instructional. The experiences of four schools in achieving low dropout rates can be useful to other school administrators and principals.

**Blackstone Valley Regional Vocational Technical High School**

The community served by Blackstone Valley Tech consists of thirteen municipalities in South Central Massachusetts, encompassing all of the Massachusetts towns of the Blackstone River Valley, which is widely accepted as the birthplace of the American Industrial Revolution. These former mill

towns have a unique identity, which they preserve— while moving forward into the 21st century and attracting new and cutting-edge industries and technologies that will keep younger generations employed in the area. BVT has long played a central role in this transformation, partnering with area businesses to discover and supply the workforce needs its students can fill.

The population of this community is solidly middle class (Free and Reduced Price Lunch is 19%), but the vocational student population served by Valley Tech is one which is often left out of ed reform equations—average to lower than average students who, met with very high expectation, respond with above average achievement and college- and career-ready success. With a dropout rate of just 0.3 %, a graduation rate of 98.2 % (compared to the state’s 83.4%), a truancy rate of 0%, and 100% of students graduating with a competency determination for the past ten years, Blackstone Valley Tech is clearly a model of education reform that deserves replication.

**Table 2: MA District/City-Based Vocational Technical Schools Dropout Rate, 2010-2011**

<b>Massachusetts District/City-Based Vocational Technical Schools</b>	
<b>School</b>	<b>2010-2011 Dropout Rate</b>
Dean Vocational Technical High School - Holyoke	15.2%
Putnam Vocational Technical High School - Springfield	6.7%
Madison Park High School - Boston	5.3%
Lynn Vocational Technical Institute	4.6%
Medford Vocational Technical High School	3.5%
Westfield Vocational Technical High School	2.1%
Leominster High School & Center For Technical Education	0.6%
Tantasqua Regional High School - Fiskdale	0.6%
Worcester Technical High School	0.5%

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Anthony Steele II, the Assistant Superintendent-Director/Principal at Valley Tech points to students' feelings that vocational education is more relevant as the key to the low dropout rates enjoyed by regional CVT schools, and says that it is different from the relevance students find in a comprehensive/regular education.<sup>19</sup>

According to Steele, CVT education is relevant in a number of ways: The students who are more academically inclined appreciate the relevance of integrating core academic concepts into shop curricula. For students who appreciate the incentive of being fully prepared to get a job upon graduation, then the real-life reward of being made employable is extremely relevant.

“We can't lose sight of the kids who understand the vocational value of being at Valley Tech—it's apparent in the number of students who will meet any shop or academic benchmark necessary to get the privilege of going out on a co-op job in their area of study for \$10-\$15 an hour. CVTE makes students understand the adult world.”

The root of BVT's success is integration. The Blackstone Valley Regional Vocational School District, from its Upton, Massachusetts campus, has accepted with enthusiasm the challenge presented at local, state, and national levels to increase student achievement by refining innovative teaching methods and instructional strategies. Using a comprehensive team approach, Valley Tech's faculty has organized model curricular and instructional practices into a single integrated high school experience which combines academic and career/technical learning, promotes opportunities for students, and creates workforce solutions for employers.

Integration has been BVT's philosophy since before education reform in 1993, but they knew they could not achieve the desired academic and vocational successes without more time on learning. Therefore, over time, the school year was lengthened to 195 days—the longest public school year in the state. Common sense would point toward students rebelling against this extra time in school, but conversely, for the entering freshman class in 2012, there were 800 applicants for the 300 available spaces—and the admissions process is meticulously “blind”, and accepts a true cross section of the sending districts.

At Valley Tech, academic teachers routinely coordinate lesson plans with their career/vocational technical colleagues, using topics, themes, and subject matter related to students' career fields to reinforce academic concepts and ideas. Additionally, year-long courses for all students on the employability, technology competency, and management & entrepreneurship strands of the CVTE frameworks, run by academic staff in conjunction with school counseling staff during the academic week, reinforce integration for each student over four years on a personalized level.

Even with the longer year, attendance rates at Valley Tech, as at the other regional vocational technical schools, are significantly higher than the statewide averages, and higher attendance rates translate into lower dropout rates. Steele explains the low truancy phenomenon: “Students come to our schools more regularly because, if they're not comfortable in a paper and pencil environment and are more inclined to be at ease with hands-on learning, it's easier for them to tolerate the CVTE model. Despite their best intentions with conventional

teaching and learning methodologies, they know that they will be able to express their growth and knowledge differently every other week.”

Steele continues, “Integrated vocational education is differentiated instruction in its most extreme form, and it is systemic throughout CVT education. It is totally personalized for each student, and includes field experience, simulation, live work, and outside jobs.” At BVT, each shop is equipped with assistive technology, and has teaching assistants assigned to it, to support students with IEP’s. More significantly, each student is regularly assessed to determine if he or she is reaching benchmarks determined by the state frameworks in a timely manner, and if not, that student is given customized supports to bring him or her up to acceptable skill levels.

According to longtime Valley Tech Superintendent, Dr. Michael Fitzpatrick, “Similar to a five-star restaurant where efficient service is linked with quality cuisine and artful presentation, effective curricular integration requires creative teaching methodology blended with relevant competencies. Ingredients for success include the process and practice of periodic industry validations to ensure the above referenced relevance.”

The BVT faculty and administration always assure that students know where they stand academically and vocationally, believing that surprises lead to frustration and ultimately to giving up. There is an iParent system in place, whereby parents/guardians can track student assignments and progress; furthermore, every student who is absent for three days or more—whether for illness, bereavement, suspension, or any reason at all—has a “re-entry meeting” with guidance,

the nursing staff, the Dean of Students, and teaching staff immediately upon his or her return, to make a plan for making up work and to guarantee a smooth re-integration to the school community.

### **Nashoba Valley Regional Vocational Technical High School**

While traditional high schools draw their students from the city or town in which they are located, often with a large population, students at regional vocational technical high schools come from multiple communities. However, some CVTE schools lack a large “anchor” community to provide the bulk of their student body, making it more challenging to recruit students.

Such is the case for Nashoba Valley Technical High School in Westford, MA, a regional school that has maintained a low dropout rate and raised enrollment by revamping its course offerings to appeal to its district communities. Since the 2005-2006 school year, NVTH has had an average annual dropout rate of just 0.6 percent, including 0.0 percent in 2008-2009 and most recently 0.3 percent in the 2010-2011 school year.

The towns in the Nashoba Valley Technical High School District, which includes Chelmsford, Groton, Littleton, Pepperell, Shirley, Townsend and Westford, collectively have the second highest median income of all the regional vocational technical school districts in the commonwealth, according to Dr. Judith Klimkiewicz, superintendent of the NVTD.<sup>20</sup>

Since the mid-1990s enrollment has grown from 300 students to more than 700, according to Dr. Klimkiewicz, largely because the school revised curriculum to reflect the

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interests of the communities and retain the students once they arrive.

“We had to do things differently,” she says. “We had to address programs that were more attractive to the communities we serve. We got rid of welding, painting and decorating, and brought in pre-engineering, robotics and dental assistant. We modeled our schools after the communities we serve.”

When Klimkiewicz became superintendent 17 years ago, she began a six-year plan of closing programs that had poor enrollment or minimal prospects for serving the community. Using U.S. Department of Labor data, a review of post-secondary programs and surveys of local employers to determine their needs, the school revamped its programs.

“Many of our towns feel every one of their students should go to Harvard,” said Klimkiewicz. “They’re just not going off to a regular college, their going off to an Ivy League school. We had to improve and do a lot of things that other schools did not need to do.”

Student attendance is stressed. Every child absent from school receives a call from the dean of students. Three unexcused absences in a trimester and the student fails. Every achievement students can earn, from Student-Of-The-Month, to Leadership Club, to participating in co-op or internships, is based on good attendance.

“They can’t get their certification for some of the programs without their hours,”

**Table 3: Top 10 Voc Tech High Schools Ranked by 2010-2011 Dropout Rate**

School Name	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	High School Enrollment	Total Drop-out n
Essex Agr and Tech Inst	1.5	0.7	0.7	0.7	0.7	1.8	0.4	0.0	482	0
North Shore Reg Voc	1.1	1.5	1.3	1.7	0.2	0.0	0.2	0.0	466	0
Norfolk County Agr	0.2	0.9	0.0	0.0	0.0	0.2	0.0	0.2	484	1
Shawsheen Valley VTHS	0.9	1.5	0.7	0.2	1.3	0.5	0.5	0.2	1,324	3
Whittier Reg Voc	0.6	1.9	0.8	1.2	0.5	0.8	0.1	0.2	1,251	2
Nashoba Valley Tech HS	1.6	1.5	0.2	1.7	0.8	0.0	0.5	0.3	665	2
Montachusett RVTTHS	3.5	1.6	1.3	0.8	1.4	0.9	0.8	0.4	1,400	5
Old Colony Reg Voc Tech	3.2	1.1	1.3	1.0	0.5	0.5	1.0	0.4	562	2
Bay Path Reg VTHS	1.7	2.8	1.3	1.2	0.9	1.1	1.2	0.4	1,077	4
Worcester Technical High	4.7	3.4	1.8	2.1	1.3	1.0	0.4	0.5	1,400	7

Source: Massachusetts Department of Elementary & Secondary Education

says Klimkiewicz. “They can’t get their cosmetology license, their electrical license, their plumbing license or their certified nursing assistant license without those hours committed.”

After the 2010-2011 school year, 82 percent of graduates went off to post-secondary training, including two- and four-year colleges. A “large percentage” of those college-bound include special education students, who make up over 30 percent of the student population. Klimkiewicz also said about two-dozen students have graduated with a high school diploma and an associate’s degree through the school’s dual-enrollment program.

### **Shawsheen Valley Technical High School**

Simple math explains why Shawsheen Valley Technical High School has an exceptionally low dropout rate: attendance = graduation. Since 2004, average daily attendance at Shawsheen has risen from 93.8 percent to 97 percent in the 2010-2011 school year, according to Superintendent Charles Lyons, of the Shawsheen Valley Regional Vocational Technical District.<sup>21</sup> During the same period, the school’s annual dropout rate has averaged 0.7 percent including a mere 0.2 percent in 2010-2011.<sup>22</sup>

“The only way kids learn is to go to school and provide them with exceptional teachers and resources,” says Lyons. “Our students are in school, we have exceptional teachers and the students graduate on time.”

Shawsheen administrators and teachers emphasize attendance in several ways. Lyons receives a report on each Shawsheen student whose attendance dips below 90 percent and

a corrective action plan is created to raise that figure. The school’s guidance counselors work with students to modify their behavior and improve their attendance, and a social worker in the dean of students’ office calls kids when they miss school. Their efforts have produced a dropout rate that is well below the 1.2 percent average combined rate of the public high schools in the five towns within the Shawsheen district: Bedford, Burlington, Billerica, Tewksbury and Wilmington.

Once students are at school they need to be engaged. Lyons believes vocational education is effective for students who are “right-brain” learners who understand things more easily through experimentation, rather than “left-brain” learners who advance through memorization. Those right-brain learners struggle to grasp concepts on a chalkboard in regular high schools, but they succeed in vocational technical schools through applied learning.

“In traditional high schools, unless you’re a really talented kid, they can bore the heck out of you,” says Lyons. “These kids are doing 75 text messages a day. Then they walk into high school and the teacher says take out your paper and pencil and let’s take notes. That’s boring.”

“If a student says he wants to be a plumber we say ‘Okay, but in order to be a plumber who makes a decent living, you’re going to have to be able to do algebraic functions,’” he adds. “We tell them they’ll need to have high communication skills to be an effective marketer and expand their business opportunities. They understand there’s a relevance to what they’re doing in school and why they’re being asked to excel academically as well as in their vocation.”

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At Shawsheen, some of those right-brain students are making connections in a new \$4.5 million, 14,500-square-foot life science wing. There, the school has enhanced its existing health-care programs by expanding training for health-care technicians, medical and laboratory technicians, and dental assisting technicians.

The change in life sciences career-tech programs is the result of a constant review of school offerings at Shawsheen, to ensure that students are in programs that fit with job opportunities upon graduation or with college and career paths with promising employment opportunities.

Among the people conducting the regular program assessments are local business owners and managers, many of whom are involved in Shawsheen's co-op program. In the 2011-2012 school year, Lyons says 170 of the 321 seniors were working with 155 local employers, many of them small businesses of less than 10 employees.

As with all regional vocational technical schools, each of Shawsheen's technology and vocational programs has an advisory council of 10 to 15 community members, including local business managers. The role of each group is to ensure that the school's programs are state-of-the-art, assist the superintendent in forecasting capital equipment needs to maintain relevancy at the vocational-technical school, and help the students get jobs.

"If we're going to invite employers in to help us with the first two things, then we need their help in securing employment for our students," says Lyons.

## Worcester Technical High School

When students at Worcester Technical High School enter the cafeteria each day they see a banner on the wall that has their handprint and signature, as well as those of their classmates. It also has a message stating their intention to graduate from high school.

"It's a promissory note to themselves and their classmates that they will graduate in four years," says Sheila Harrity, principal of the school. "Every day at lunch they see their hand print. Our dropout rate is low because of that commitment."<sup>23</sup>

In schools across the country, the dropout rate is often higher among schools located in urban areas where the problems of gang violence, poverty and family dynamics can derail a student's attempt to graduate from high school. Yet in Worcester, the state's second largest city, Worcester Tech is defying the odds.

In the 2010-2011 school year, Worcester Tech's dropout rate was just 0.5 percent, well under the statewide average of 2.7 percent and the 0.9 percent dropout rate for all vocational technical schools in the commonwealth. Among its sister urban district-controlled vocational technical schools, whose average dropout rate was 4.4 percent in 2010-2011, Worcester Tech had the lowest rate.

Perhaps more impressive is how Worcester Tech compares with schools in its own backyard. The district-wide dropout rate among the seven high schools in Worcester was 3.7 percent and Worcester Tech, with its 1,400 students, has the largest enrollment in the city.

Certainly the new \$90 million, 400,000 square-foot facility that Worcester Tech

opened in 2006 makes for a more attractive environment than older schools. But Worcester Tech's low dropout rate and 95.8 percent graduation rate are a marked turnaround from where the school was a decade ago. Paired with the new facility was a new educational attitude that gave Worcester Tech the autonomy it needed to operate on its own, as a separate CVTE entity, and not "just another Worcester High School."

"We needed to address the rigor of the academics connected to the technical program," says Harrity. "We certainly had strength in the technical program and we had state of the art technology and equipment to support that, but we needed the integrated approach that really made student education relevant."

Worcester Tech began incorporating more Advanced Placement courses into its four small learning communities: Alden Design and Engineering; Coghlin Construction Technology; Information Technology and Business Services; and Allied Health and Human Services Academy. It was approved to be a Massachusetts Math and Science Initiative (MMSI)<sup>24</sup> school, a program to increase participation in AP courses among underserved populations, with a pledge to increase AP offerings in science, technology, engineering and math. Advanced Placement enrollment was up 93 percent in the 2010-2011 school year compared with the prior year.

The more challenging courses are combined with equally challenging technical programs, anchored by teachers whom Harrity calls "masters of their trade." She says in addition to having the required state teaching certifications, instructors at Worcester Tech

are on top of industry trends to insure that students become "career and culture ready."

## **Recommendations**

*District-run CVTE schools should be given more autonomy*

In urban school districts, where low income and immigrant populations are higher than in suburban areas, the dropout rate is also higher. Yet in the state's largest cities the dropout rates of the vocational technical schools are below the district averages and often among the lowest in the city. In Boston, Madison Park High School's 5.3 percent dropout rate in 2010-2011 was lower than the district average of 6.4 percent and among the largest of the city's schools with more than 700 students. In Springfield, Putnam Vocational Technical High School's 6.7 percent dropout rate was well below the district average of 11.7 percent and Worcester Technical High School's 0.5 percent dropout rate was not only lower than the district average of 3.7 percent, it was the lowest rate among the city's seven high schools. Vocational technical education can provide low-income and immigrant students with job-ready skills faster than a comprehensive high school. The small learning environments and the close relationships that vocational teachers develop with their students are ideal for urban schools, where teenagers are at a higher risk to dropout.

As has been demonstrated by this paper, and by MA DESE data, when vocational-technical schools and programs are autonomous, they are significantly more successful, especially at retaining students, than CVTE schools and programs that are run as a component of a larger district (see chart, p. 2). Generally, district-run CVTE schools do not have the independence and self-governance

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needed to set their own budgets, write their own integrated curriculum and create the specialized faculty and staffs needed to realize the successes commonly enjoyed by their autonomous regional peer organizations, which have their own superintendents, practices, schedules, and district policies.

A blue ribbon panel hired by Mayor Thomas Menino in 2012 to study Boston's in-district CVTE school, Madison Park, came to the same conclusion, stating: "the Review Team believes that Madison Park needs more flexibility. This core principle has already been recognized around the Commonwealth, since most of the regional vocational technical high schools function independently of the districts they serve. They have the freedom to set policies and procedures appropriate for a vocational technical high school, and to establish conditions that recognize the unique responsibilities and needs of their students, their teachers and their programs. In contrast, Madison Park currently operates as other comprehensive Boston high schools.<sup>25</sup> We believe that this holds true for all in-district voc-tech high schools that are not given the freedom to operate up to the vocational and academic standards required to create a strong CVTE program, as is Worcester Tech.

### *Create more vocational technical schools*

The success of vocational technical education in Massachusetts has created more interest among families to send their children to vocational technical schools. Waiting lists have developed at most schools, prompting at least one state legislator to propose a change in admissions policies at CVTE schools—which place a high value on behavior, because of the state-of-the-art equipment and safety issues in CVTE schools. But such a change, essentially lowering admissions standards for CVTE schools, would be a backward

step. Additionally, it suggests that vocational technical schools should be places to channel students of whom less is expected. In fact, in today's competitive job market, employers in the trades are looking for well-educated, qualified workers just as much as companies in white-collar sectors. Massachusetts citizens would benefit from statewide leadership to open additional regional CVTE schools to address the growing demand for career-technical education.

### *Time to reinvest in vocational technical schools*

In the 1960's, policy makers made vocational technical schools ready for the 20th century. It is now the second decade of the 21st century and some vocational technical schools are 50 years old. It's time to reinvest in them again. In April, 2012, the Patrick Administration filed a supplemental capital bond bill that would secure \$5 million in funding over five years to help vocational schools upgrade laboratories and shop equipment. The funding will help provide students with state-of-the-art equipment to prepare them for higher education and jobs in a competitive economy. The fiscal year 2012-2016 capital plan includes \$1 million in FY2012 for the grant program. The supplemental bond bill requires legislative approval in the coming years. Lawmakers should grant that approval.

### *Support an awareness campaign about vocational technical education*

The administration and Department of Elementary & Secondary Education should work with practitioners to support a customized public relations campaign to bring attention to the successes of vocational technical schools in the Commonwealth. For many people, the false impression that these schools are for students who aren't



serious, are discipline problems or are not “college material” still exists. Yet, for many families, the choice of attending a career vocational technical school could be ideal for a child who is interested in learning to apply specific skills, while also moving on to post-secondary education. Such a program could focus on the low dropout rates, internship opportunities, post-graduation job placements, and percentage of students who are accepted to two- or four-year colleges.

***About the Authors:***

**Alison L. Fraser** is an education policy, research and strategy consultant, and president of Practical Policy. She was previously the Director of Policy and Advocacy at Mass Insight Education, where she directed the Great Schools Campaign and the development of *No Excuses for Failing Schools* and *Excellence in Math and Science* goals. An expert in standards-based curriculum, she has coordinated activities and programs for the Coalition for Higher Standards and has led research in standards-based reform. She is currently an administrator at Blackstone Valley Tech and the Executive Director of Science from Scientists.

**William Donovan** is a former staff writer with the *Providence Journal* in Rhode Island where he wrote about business and government. He has taught business journalism in the graduate programs at Boston University and Northeastern University. He received his undergraduate degree from Boston College and his master’s degree in journalism from American University in Washington, D.C.

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