

THE CRITICAL IMPORTANCE OF VOCATIONAL EDUCATION IN THE COMMONWEALTH

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Kitty and Michael Dukakis Center for Urban and Regional Policy

The Kitty and Michael Dukakis Center for Urban and Regional Policy conducts interdisciplinary research, in collaboration with civic leaders and scholars both within and beyond Northeastern University, to identify and implement real solutions to the critical challenges facing urban areas throughout Greater Boston, the Commonwealth of Massachusetts, and the nation. Founded in 1999 as a “think and do” tank, the Dukakis Center’s collaborative research and problem-solving model applies powerful data analysis, a bevy of multidisciplinary research and evaluation techniques, and a policy-driven perspective to address a wide range of issues facing cities and towns. These include affordable housing, local economic development, workforce development, transportation, public finance, and environmental sustainability. The staff of the Dukakis Center works to catalyze broad-based efforts to solve urban problems, acting as both a convener and a trusted and committed partner to local, state, and national agencies and organizations. The Center is housed within Northeastern University’s School of Public Policy and Urban Affairs.

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PREFACE

Massachusetts is in the enviable position of having an educational system—from grade school through graduate school—that is recognized as “world class.” We are justifiably proud of this record of achievement, but given global competition, we know we must strive to be even better. One of the least-understood jewels in the state’s educational career treasure chest is Career/Vocational Technical Education (CVTE). While not everyone is aware of what CVTE is or the role it is playing in the Commonwealth, there are indications that the word is spreading. The clearest sign is the large number of students who are on waiting lists because many CVTE programs and schools are fully subscribed.

A peculiar paradox is at work in our perceptions of vocational schools. Some still believe that these schools are reserved for students who cannot succeed in the state’s comprehensive high schools. Yet given the length of waiting lists at many CVTE schools, an increasing number of community advocates feel that students from lower-income families are being denied opportunities to receive the sophisticated professional education CVTE schools offer. Moreover, many employers are complaining about the problems they confront in finding adequately prepared workers and wish to see the CVTE system expanded, something CVTE educators would like to do if adequate funding were available.

In the fall of 2014, a group of Massachusetts organizations concerned with strengthening CVTE in the state began meeting regularly at Blue Hills Regional Technical School in Canton. Calling ourselves the Alliance for Vocational Technical Education, we represented employers, CVTE administrators/superintendents, community organizations, and state government administrators, along with representatives of a number of statewide think tanks. The members of the Alliance brought various perspectives, expertise, and experience to the table with the purpose of recommending ways to bring the state’s CVTE system into better alignment with today’s challenges.

From our first days, the Alliance has grown steadily. Today, its members include:

- Massachusetts Communities Action Network (MCAN)
- Massachusetts Association of Vocational Administrators (MAVA)
- Worcester Regional Chamber of Commerce
- Massachusetts Business Alliance for Education (MBAE)
- Massachusetts Business Roundtable
- Massachusetts Competitive Partnership
- Massachusetts Technology Collaborative
- Pioneer Institute
- MassINC
- Massachusetts Department of Elementary and Secondary Education (DESE)
- Jobs for Youth Networks (JFY Networks)
- SkillWorks (The Boston Foundation)
- MassDevelopment
- Catholic Charities
- The Workforce Solutions Group
- Regional Employment Board of Hamden County
- Western Mass Economic Development Corporation
- The United Way of Massachusetts and Merrimack Valley
- Commonwealth Corporation
- Massachusetts Marine Trades Association

The Federal Reserve Bank of Boston, Office of Community Affairs also has a seat at the table in an observer capacity.

To make better sense of the CVTE paradox, this Alliance asked Northeastern University's Kitty and Michael Dukakis Center for Urban and Regional Policy to conduct a series of surveys to assess how CVTE administrators, students, graduates, employers, and parents, and the public at large view the current state of vocational education in the Commonwealth and how it could be strengthened. To this end, Barry Bluestone, the director of the Dukakis Center, and Catherine Tumber, a senior research associate at the Center, were tasked with designing and administering these surveys and preparing the following report.

We would like to thank the following member organizations of the Alliance, as well as the Nellie Mae Foundation, who donated the generous funding that made this report possible: the Worcester Regional Chamber of Commerce, SkillWorks, MassDevelopment, Massachusetts Competitive Partnership, Massachusetts Communities Action Network, Massachusetts Business Roundtable, Massachusetts Association of Vocational Administrators, and Catholic Charities. *Thank you.*

Finally, and not least, we extend our hearty thanks to students and faculty in the Multimedia Communications Department at Blackstone Valley Regional Vocational Technical High School, who designed, laid out, and printed this report. They pulled together the project with exceptional skill, speed, and professionalism, and have earned not only our gratitude but also our respect.

SECTION I: INTRODUCTION

For nearly a century, the funding, organizational structure, and curricula of Career/Vocational Technical Education (CVTE) in the Commonwealth have run more or less parallel with structural shifts in the U.S. economy. Since 1906, when the Massachusetts Commission on Industrial and Technical Education urged the establishment of the first publicly funded industrial schools, vocational education has been something of a political football, tossed around in response to changing views regarding the place of manual skill training, high-tech/STEM literacy, and the liberal arts in our secondary schools—and, more broadly, in American culture.¹

With the industrial revolution in full swing, the Smith Vocational and Agricultural High School was founded in Northampton in 1908, the first of its kind in the state. A month later the New Bedford Independent Industrial School opened its doors, and both schools are still in operation.

The federal government took its first foray into vocational schooling during World War I. The passage of the Smith-Hughes Act in 1917 provided funds for a program to encourage working class youth to learn skills fit for the rising industrial workforce, including mechanized agriculture and home economics. With this act, dual-tracked CVTE became a staple of many comprehensive high schools. Students could take both college preparatory courses and courses related to various trades, but the legislation's key goal was to prepare high school graduates to enter blue collar occupations.

With the emergence of the high-tech knowledge economy in the last quarter of the 20th century, the Perkins Act of 1984 (and its successors) required CVTE programs to step up their game and apply college-readiness standards to their students as well as to provide quality programs to “individuals who are disadvantaged, handicapped, entering nontraditional occupations for their sex, adults in need of training or retraining, single parents or homemakers, individuals with limited proficiency in English and individuals who are incarcerated.”

This ambitious twin mandate, though admirable, had to contend with declining federal funding during the Reagan-Bush administrations. Less funding meant going back to the manual basics of vocational education, reinforcing the stigma that CVTE is geared to the academically and behaviorally challenged. Reduced federal funding also compelled many comprehensive high schools to trim their vocational programs or close them down altogether. In Massachusetts, most of these programs were consolidated into regional schools—26 of them today—serving multiple school districts under Chapter 74 of the Commonwealth's general laws, which conforms with the Perkins Act and is administered by the state Department of Elementary and Secondary Education (DESE). As of December 2015, the list of Chapter 74-approved programs included: 26 regional vocational technical school districts, 31 local school districts, nine academic regional school districts, two county agricultural and technical school districts, one independent vocational and agricultural school district, and one educational collaborative.²

The Commonwealth's Vocational Technical Schools Today

Today we have reached another turning point. For a variety of reasons, the Commonwealth's CVTE schools and programs appear to be stretched too thin. A recent study conducted in 2012 and 2013 estimates that more than a third of the state's regional CVTE high schools had long waiting lists, well exceeding 100 students at that time. Nearly 3,200 applicants were on CVTE school waiting lists as of October 2015.³ The longest waiting lists were in many of the state's Gateway Cities including Brockton, Fall River, Fitchburg, Lawrence, Lowell, New Bedford, Peabody, Salem, Springfield, and Worcester. Administrators report that an alarming number of desirable courses are oversubscribed and therefore even those admitted do not always get their first-choice vocational program.

It must be borne in mind too that one-third of the state's 351 communities are not served by CVTE programming of any kind. Meanwhile, participating towns are required to approve funding for their regional CVTE schools—funding that comes out of their own school budgets, setting up a

competition for students and scarce dollars that tends to keep many of the regional schools in a fiscal straightjacket. Making their fiscal balancing act even more difficult, CVTE schools are typically 50 percent more expensive to run than traditional high schools because in addition to classroom space, they must provide up-to-date equipment, materials, and safety apparatus for their occupational programs. Despite all of these challenges, enrollment at CVTE regional high schools is up even as public school enrollment in general has dropped.⁴

In many ways, CVTE schools are victims of their own success. MCAS pass rates are generally higher than in Massachusetts's regular public high schools and dropout rates are much lower. For the 2013-14 academic year, according to DESE, the dropout rate at regional vocational technical schools was just 0.7%, nearly one-third that of traditional public high schools. Once these students graduate, 56.7% pursue post-secondary education, compared with 78.1% of comprehensive high school graduates.⁵ As such, vocational schools and comprehensive high schools are increasingly attracting students who are similar in educational trajectory.

CVTE high schools achieve these results with more diversified student bodies. Almost one-quarter of vocational school students are on individualized education plans, compared with 17% statewide. Yet special education students' graduation rates are 20 percentage points higher at regional CVTE schools than at regular high schools.⁶ These students, along with more traditional learners, benefit from the Commonwealth's distinctive CVTE curriculum structure, which encourages students' focus by alternating academic and skills training classes every other week.

What may also be leading to increased demand for vocational schools is the rising cost of post-secondary school, which puts added pressure on students to acquire skills that lead to good jobs at decent wages. It also gives them more occupational choices as they enter adulthood. And what has been called the Maker Movement has enveloped the trades with greater cultural cache among millennials.⁷

Meeting the Needs of More Students

Our over-capacity vocational schools' demonstrated ability to attract high-performing students, however, leaves two of its traditional constituencies foundering and potentially underserved. One group consists of those students with lackluster academic or disciplinary records, often with fewer family resources, who have historically benefitted the most from career vocational education, and who now must compete for vocational school slots with better-prepared

students—many of whom are college-bound. As Buck Upson, retired chief executive of a Western Massachusetts distributor of manufacturing equipment, told the *Boston Globe*, “The kids that need the break, that don't have the option to go to college, are being bypassed.”⁸

The other group adversely affected by the lack of space in the Commonwealth's vocational schools consists of employers, many of whom claim they are having difficulty filling skilled, well-compensated jobs and are facing more potentially unfilled job openings as the baby boom generation enters retirement in greater numbers. A study released this fall by the Dukakis Center, *Meeting the Commonwealth's Workforce Needs: Occupational Projections and Vocational Education*, upended prevailing assumptions about the state's future labor market demand.⁹ It found that one-third of those in today's workforce have no more than a high school diploma, and nearly two-thirds have no more than some college or an associates degree earned from a community college. The study projects that, since about two-thirds of future job openings between now and 2022 will be replacements—due to retirement, departure from the state, or transfer into other occupations—the majority of jobs will still require something less than a full-four-year college degree. The top four occupational job openings aligned with these educational requirements, according to the report, will be in Food Preparation and Servicing, Office and Administrative Support, Sales and Related Occupations, and Health-care Practitioners and Technical Support. According to another Dukakis Center study, published in 2012, manufacturing job replacements alone will amount to about 96,000 jobs by 2022.¹⁰ A quarter of these jobs will be for production workers.

Another issue facing the state's CVTE schools is the claim that there exists a “mismatch” between the skills employers need and those the workforce provides. The so-called skills gap has received a great deal of attention in the media with economists split on the issue. If the skills gap is so large, why have wages not risen to attract more workers to these skilled occupations? As it turns out, the Dukakis Center study of Massachusetts manufacturing found that the wages of skilled craftsmen have indeed increased relative to other occupations, suggesting just such a shortage. And where the skills gap does exist, can it be attributed to inadequate schools? There has been no definitive understanding of what employers mean when they say they cannot find the right kinds of workers to fill open positions, or how many of them share this complaint.¹¹ The new research reported here used extensive surveys to address many of these issues concerning the strengths, weaknesses, and opportunities facing the Commonwealth's vocational technical schools.

Research Design

Working together, representatives of the Alliance for Vocational Technical Education (AVTE) identified the key constituencies that should be surveyed and the broad questions that should be asked. A small subcommittee worked with the Dukakis Center to refine the questions, which then went through several rounds of discussion and debate at Alliance meetings. In all, the group devised seven surveys designed for employers, CVTE school administrators, students at regional CVTE high schools, students at comprehensive high schools that offer CVTE programming, recent graduates of CVTE schools and programs, parents of CVTE students, and the community at large. Of these, six surveys (see Appendix A) are analyzed in this report; our sample of student respondents in comprehensive high schools did not cover enough schools to be representative for valid analysis.

With that exception, large numbers of respondents completed these surveys, thanks to the diligence of Alliance members who distributed the surveys during the late spring and summer of 2015.

Administrators, parents, and CVTE alumni surveys

(distributed by MAVA)

Results: 80 Administrator responses
475 Parent responses
371 CVTE alumni responses

Students survey

(distributed by MAVA and JFY Networks)

Result: 3,208 responses

Employers survey

(distributed by the Massachusetts Competitive Partnership, the Mass Business Alliance, the Worcester Regional Chamber of Commerce, the Massachusetts Association of Chamber of Commerce Executives, the Massachusetts Business Roundtable, and Associated Industries of Massachusetts)

Result: 352 responses

Community survey

(distributed by the Massachusetts Communities Action Network, Catholic Charities, Mass Development, and the Mass Nonprofit Network)

Result: 579 responses

Key Findings

Employers Survey

- The employers surveyed overwhelmingly prefer to hire graduates from CVTE schools or vocational programs in comprehensive high schools for both entry-level (75%) and higher-level (61%) positions.
- More than 90% of employers see a need to increase the number of vocational high school graduates. Nearly the same percentage see a need to provide vocational schools with more modern equipment to train their students.
- Nearly all of the employers surveyed find it important that vocational schools better train their students in professional “soft skills” such as workplace behavior, etiquette, and teamwork.
- Over the past five years, the majority of employers (69%) have increased investment in training. A majority of employers (55%) report that they are already involved in some way with vocational schools. Of those not involved, 75% said that they would consider getting involved.

Current Students Survey/CVTE Alumni Survey

- Student satisfaction with the quality of their vocational programs is extremely high. A large majority report that their programs meet their expectations—35% “Somewhat”, 59% “Very Much”—for a total of 94%. An even larger majority of vocational school alumni (96%) also report that their vocational programs met their expectations. Of those who think there is room for improvement, nearly four in ten believe their schools could use better or more modern facilities and equipment, and more than 30% are concerned about teacher quality.
- Overall, enjoyment of and interest in a particular trade or occupation and the skills associated with it are by far the chief motives for choosing CVTE programs and schools, among both alumni and current students. Nearly 80 percent of current vocational school students suggest the strong reputation of their school helped encourage them to attend, and an even higher percentage are happy with the vocational facilities at their school. More than two-thirds are pleased with the fact that their school is near their home, and almost that many report that they feel safer at their vocational school than they would at their local high school.
- A clear majority of current students are planning to continue their schooling beyond high school. Nearly half expect to go full-time to a four-year college after high school graduation with another 9% expecting to attend a four-year college or university on a part-time basis.

Another 16% expect to go on to a two-year college either on a full-time or part-time basis. These numbers align closely with those of recent graduates, 26% of whom are working full- or part-time in the field they studied in high school or pursuing further training, and 20.3% of whom are working full- or part-time in another field.

- The percentage of students who did not get into their first-choice vocational program has increased from 8% among alumni to 16% among current students, suggesting that limited space in particular programs is reducing student choice in the state's vocational schools.

CVTE Administrators Survey

- A very large percentage of administrators (93%) report that their schools participate in community college partnerships for which students can receive formal credit. However, the majority (64%) report that 10 percent or fewer of their students take advantage of such programs.
- A large majority of administrators (82%) maintain that their schools face obstacles to expansion. By far, the biggest obstacles lie in funding, specifically for buildings (85%), equipment (64%), and personnel (60%). Relatedly, they report that the Commonwealth's requirement that all towns served by a given regional VTE high school must approve funding requests further complicates expansion planning.

Parents Survey

- By a wide margin (96%), parents had a favorable opinion of the vocational school or program their kids were enrolled in, with 68% reporting a "very favorable" opinion.
- Strikingly, parents receive virtually no information from the three groups administrators identify as their most successful marketing partners: local businesses, chambers of commerce, and CVTE advisory boards. Parents report that they learn about CVTE primarily through other parents (36%) and from material sent by either the school district or an individual school (43%). An unusually high percentage of respondents (43%), however, identified "other" channels of information not provided on the survey. Among these, the overwhelming majority of respondents mentioned that either they or their family members were CVTE alumni—usually of the school that one or more of their children attended. The second largest group of responses referred to middle school outreach, either through a specific guidance counselor or a formal information session.

Community Survey

- A large percentage of our community respondents (90%) are aware of CVTE programs for high school students in their communities or urban regions. Ninety-one percent have a favorable opinion of them, with nearly six out of ten having "very favorable" impressions. Of those who are parents of children age 15 or younger, more than two-thirds report that they would consider sending them to CVTE schools or programs.
- Surveys of both parents and community members suggest that CVTE administrators overestimate the "stigma" attached to vocational technical education.

SECTION II: EMPLOYERS SURVEY

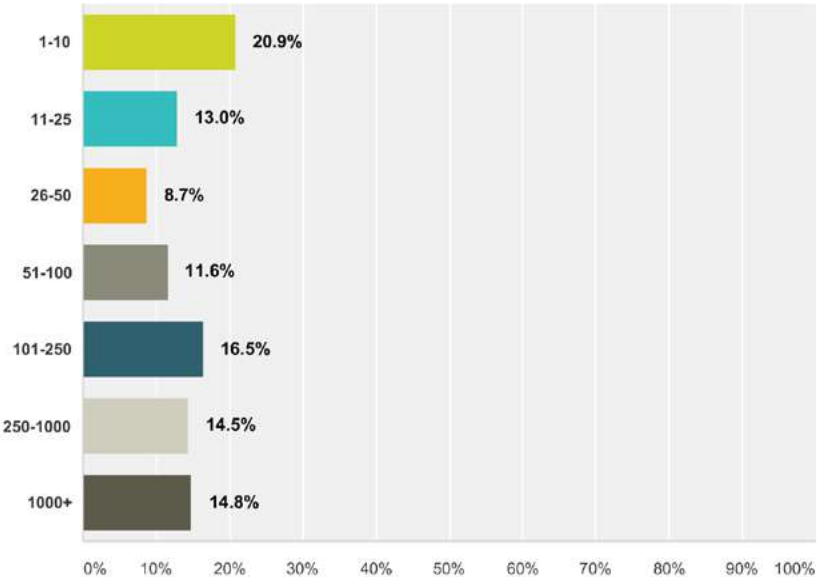
Employer Respondents by Industry

In all, 352 employers responded to our survey. Our respondents are well-represented by industry, with the top five including Manufacturing, Professional and Technical Services, Educational Services, Construction, and Health Care and Social Assistance. Together, representatives of these five key industrial sectors constitute 67% of the total number of respondents

Answer Choices	Responses
Agriculture, Forestry, Fishing & Hunting	0.9%
Construction	8.4%
Manufacturing	26.5%
Utilities	2.3%
Wholesale Trade	2.9%
Retail Trade	5.8%
Transportation and Warehousing	1.7%
Information	2.0%
Finance and Insurance	3.2%
Real Estate and Rental and Leasing	1.4%
Professional and Technical Services	13.0%
Management of Companies and Enterprises	0.0%
Administrative and Waste Services	0.0%
Educational Services	11.8%
Health Care and Social Assistance	7.8%
Arts, Entertainment and Recreation	2.6%
Accommodation and Food Services	3.7%
Other Services, Ex. Public Admin	3.5%
Public Administration	2.6%

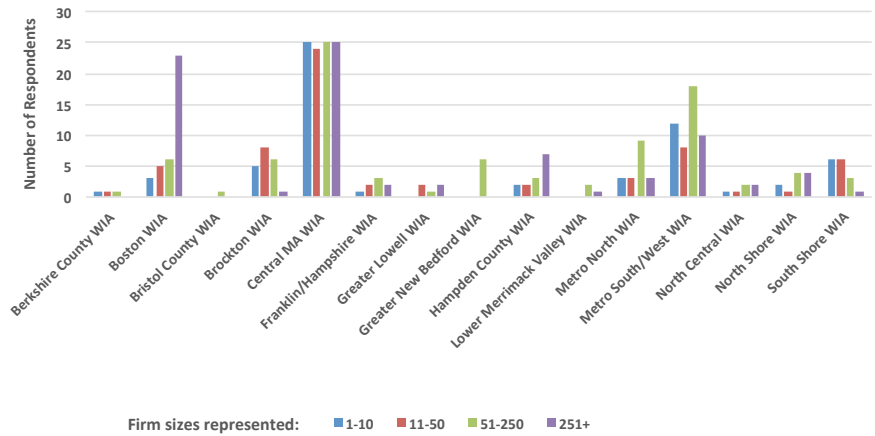
Respondents by Employee Firm Size

Also, our employer survey respondents are evenly distributed by firm size. One-fifth (21%) are small firms with 10 or fewer employees. A little more than a third (34%) are midsize employers with 11-100 employees. Forty-six percent are firms with more than 100 employees.



Number of Employer Respondents by Workforce Investment Area (WIA)

Respondents' geographical distribution broadly reflects the economic geography of the state, with the exception that the Boston and Worcester metro regions—the two largest in the state—are somewhat more heavily represented than the others. We based geography on Workforce Investment Areas as depicted in Map 1. All but one (Cape and Islands) of the 16 Massachusetts WIA are represented in this study.



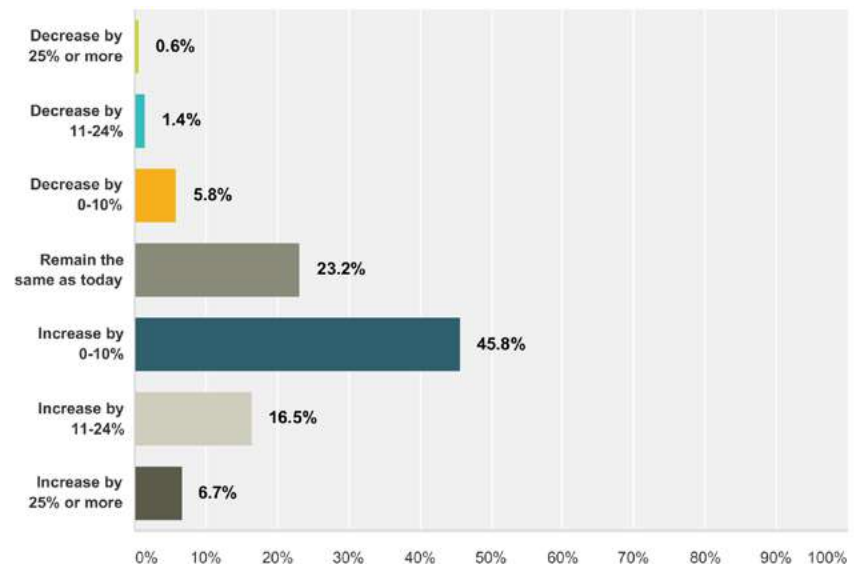
Massachusetts Workforce Investment Areas



Source: Massachusetts Workforce Board Association

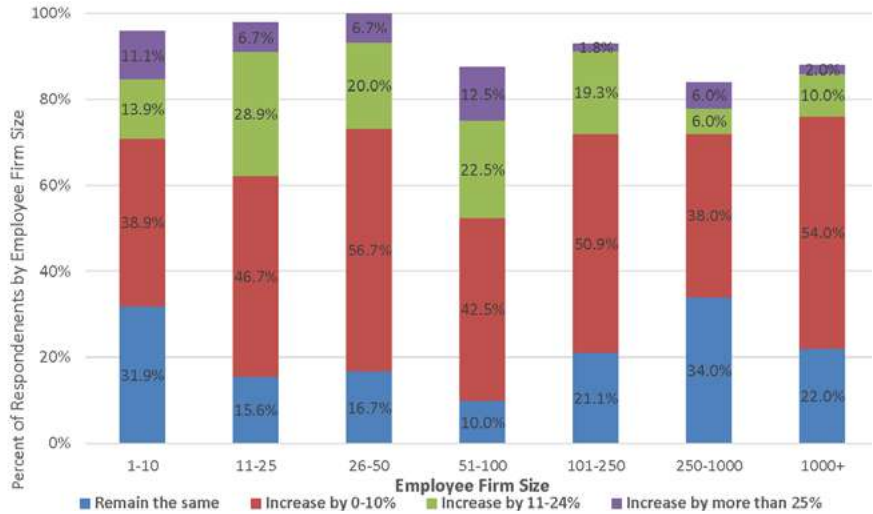
Anticipated Workforce Levels Over Next Five Years

The majority of responding employers (69%) expect to increase employment over the next five years. Of these, nearly a quarter expect to increase employment by at least 11 percent.



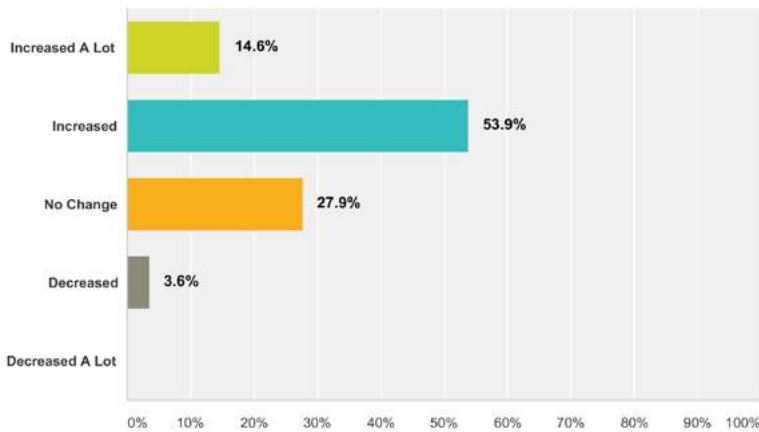
Anticipated Five-Year Workforce Expansion Plans by Firm Size

Regardless of size, a majority of firms expect to increase employment over the next five years.



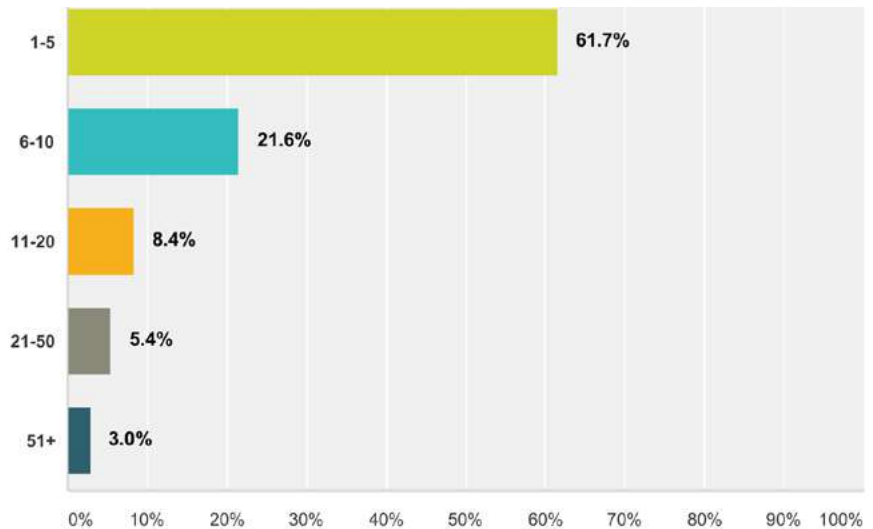
Extent of Increase in Employer Investment in Training

Over the past five years, the majority of employers (69%) have increased investment in training.



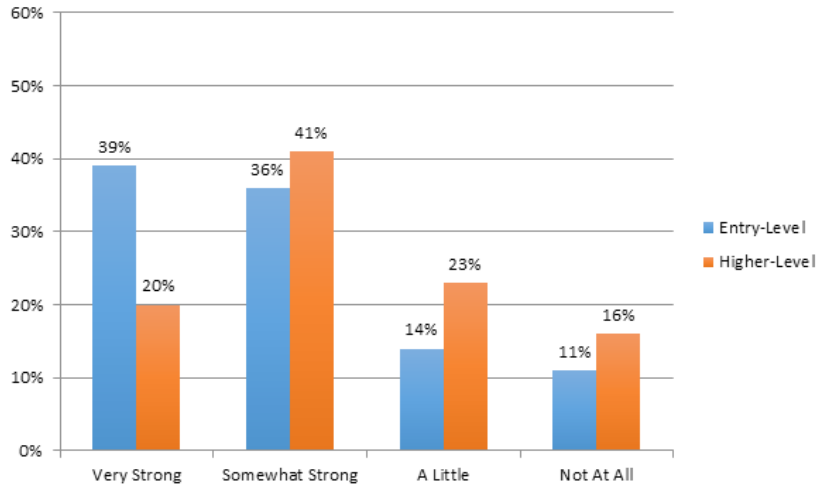
Number of Vocational High School and Program Graduates Hired Over the Past Five Years

More than half of the firms surveyed (53%) have hired CVTE grads over the past five years. Of those, the majority (62%) hired 1-5 such employees, 30% hired 6-20, and more than 8% have hired more than 20.



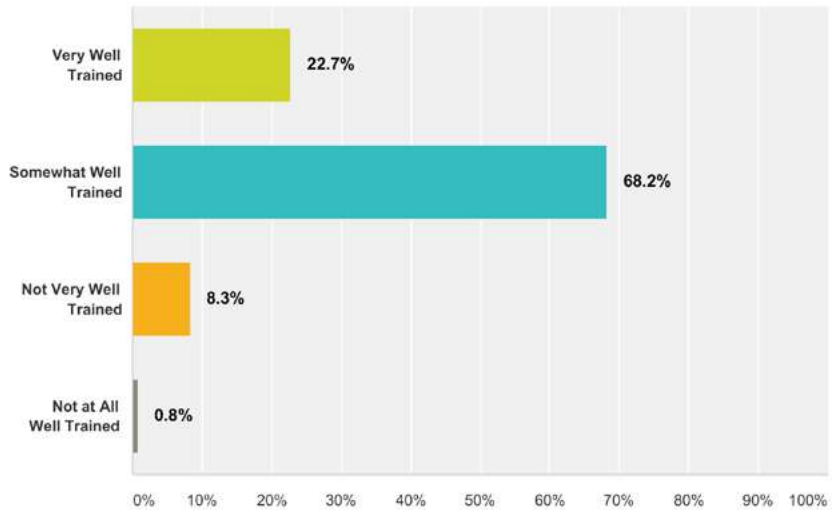
Strength of Employer Preference for Vocational School and Program Graduates

One of the most important findings is that these employers overwhelmingly prefer to hire graduates from vocational schools and programs for both entry-level (75%) and higher-level (61%) positions.



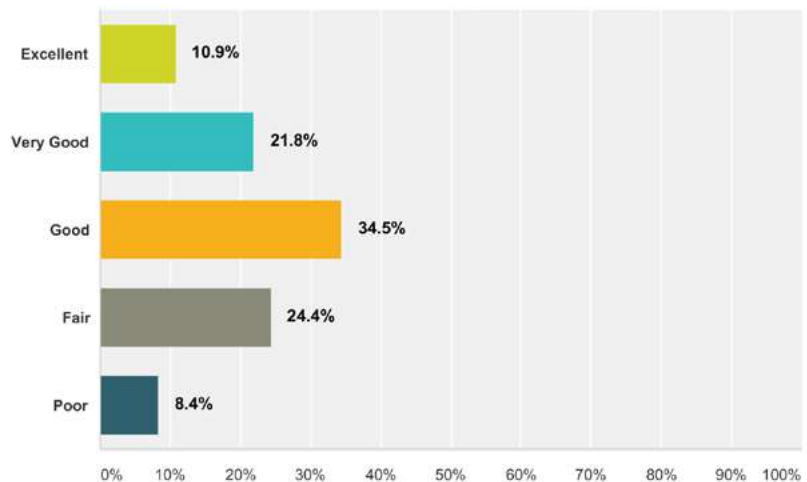
Level of Employer Satisfaction with Specific Technical Skills Among CVTE Hires

On the whole, surveyed employers are satisfied with the technical skills of their vocational school hires. Less than 10% feel that CVTE grads are not sufficiently trained in specific technical skills while nearly 23% say they are very well trained. However, more than two-thirds (68%) say that CVTE grads are “somewhat” well trained ... suggesting some improvement might be warranted.



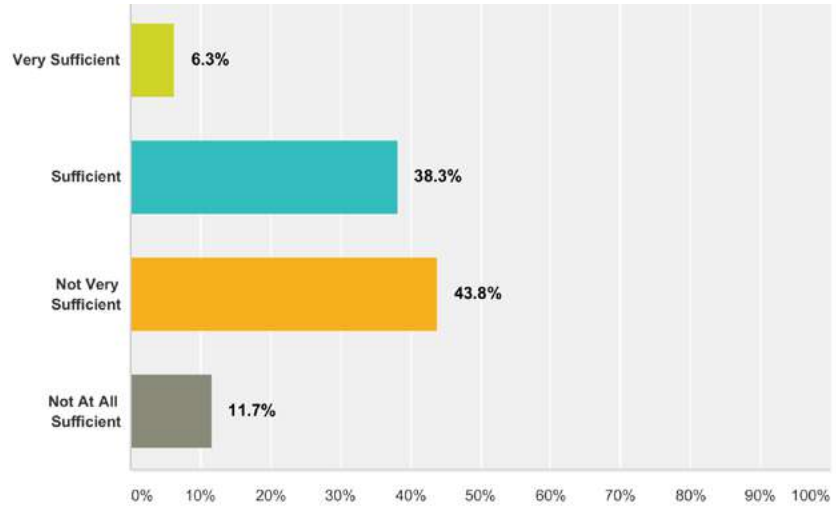
Employers' View of Local CVTE School's Ability to Prepare Students for Occupational Licensing or Certification

There also appears to be room for improvement in CVTE schools' preparation of students for occupational licensing or certification, with the verdict split evenly three ways. Thirty-three percent of employers report such preparation as “very good” to “excellent,” 34% say it is “good,” and 33% say that it is “fair” to “poor.”



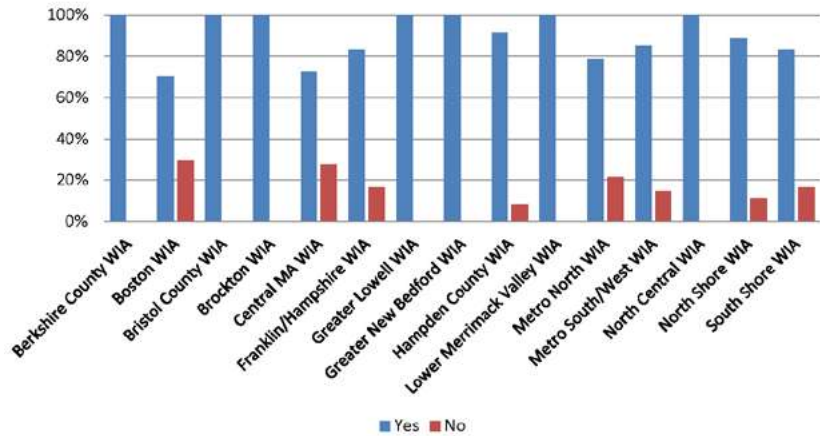
Sufficiency of Number of Competent CVTE Graduates to Meet Employer Workforce Needs

A majority of surveyed employers (55%) believe the number of competent CVTE grads is insufficient to meet employers' needs.



Importance of Improving CVTE in Employers' Region by WIA

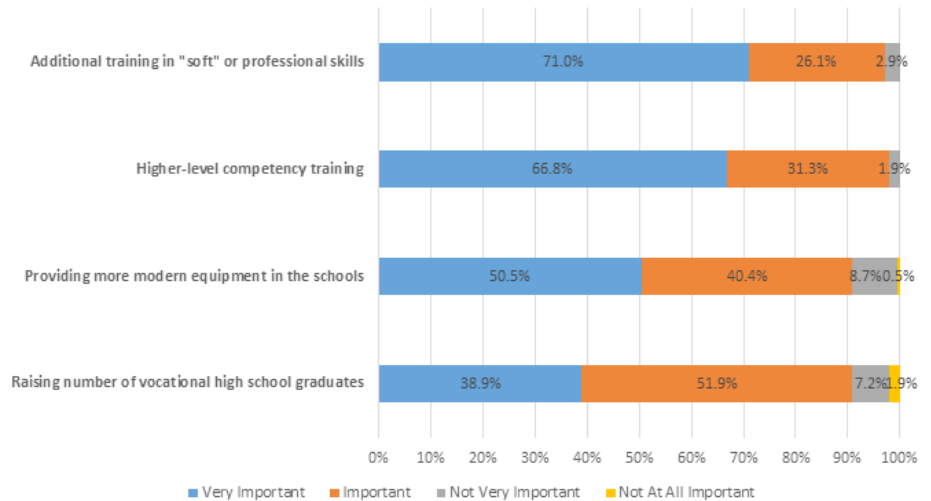
An even larger majority of employers (81%) claim that it is important to improve CVTE schools and training in their region(s). These opinions are distributed, by region, as follows.



Areas in Need of Improvement According to Employers

Overall, more than 90 percent of surveyed employers suggest the need to increase the number of vocational high school graduates. Nearly the same percentage suggest the need to provide vocational schools with more modern equipment to train their students.

Most striking, nearly all of the employers surveyed find it important that vocational schools better train their students in professional or "soft" skills, such as workplace behavior, etiquette, and teamwork. Similarly, nearly 100 percent suggest the need to continue to boost the technical competency of their graduates, presumably to meet rising employment standards.



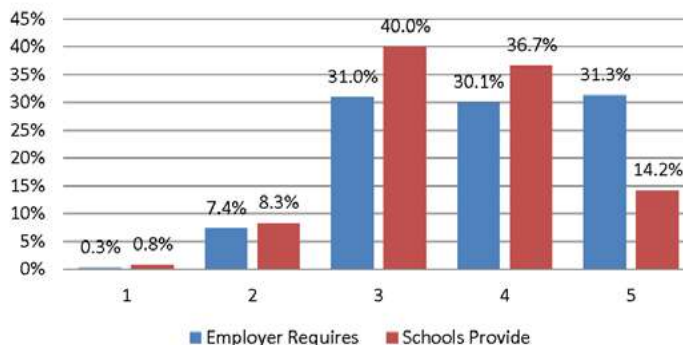
Areas Where Employers Would Like to See Improvement in CVTE Graduates' Competency Levels

Running through a list of specific basic competency measures, the surveys allowed us to compare the competency levels desired by employers with the competency levels they found among hired CVTE grads. Two things are striking about these data. The first is that, with one exception, CVTE grads' basic competency levels align with employers' requirements, although not at their highest levels. The second is this: the exception lies in the area of professional or "soft" skills, in which the majority of employers (55%) have "very high" expectations that are met by only 21% of their CVTE hires. Likewise, fewer employers (12%) require middle-to-low level professional skills, but nearly three times that number (34%) end up hiring CVTE grads whose "soft skills" lie in that range.

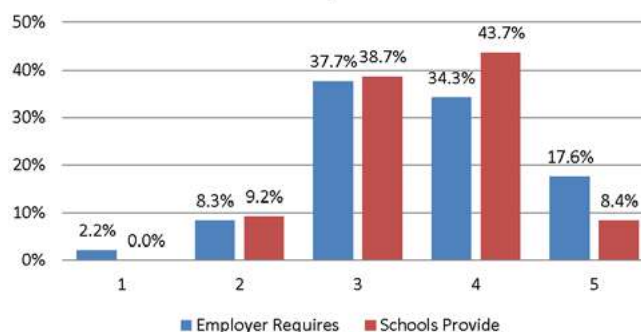
In reading and math comprehension, as well as in computer skills, students are more than exceeding employers' high-level expectations; in writing competency, employer's high-level expectations are almost met.

In professional "soft" skills and the related area of speaking competency, however, employers' higher expectations are not being met. According to the employers' surveyed, 64.6% of their positions require "high" to "very high" level speaking competency, but only 49.2% of CVTE graduates are meeting those expectations. Of more concern, 55.4% of jobs require "very high level" professional skills, while less than a quarter of their CVTE applicants come to work equipped with them.

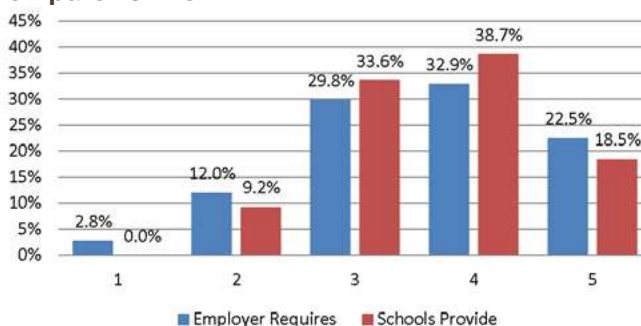
Reading Comprehension



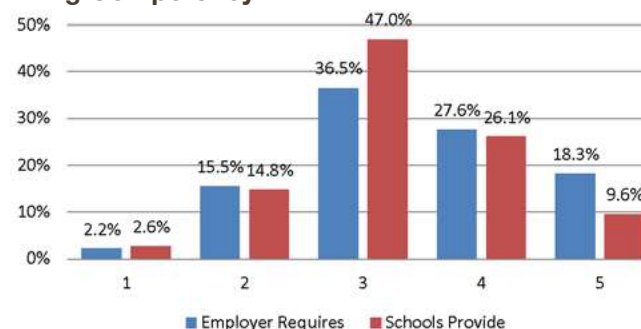
Math Comprehension



Computer Skills



Writing Competency



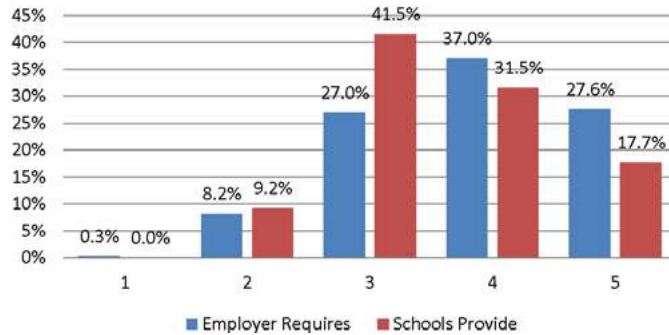
To sum up: Employers are generally satisfied with how the requirements of their jobs compare with CVTE students' basic competencies, except in the areas of soft skills and speaking competence. They also see room for improvement in the specific technical competencies for which CVTE graduates are hired. Even with these challenges, though, large majorities of employers who have hired CVTE graduates prefer them to regular high school graduates for both entry-level (75%) and higher-level (61%) jobs. How could the system improve still further? Our next set of questions concerned how to make a good CVTE system better. Specifically we asked what level of involvement employers have had with their local or regional vocational schools and what roles they would consider playing in the future.

Level and Type of Employer Involvement in CVTE Schools

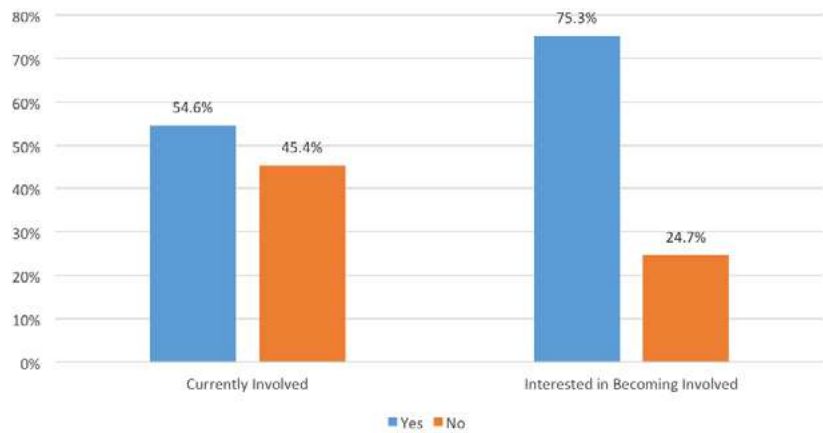
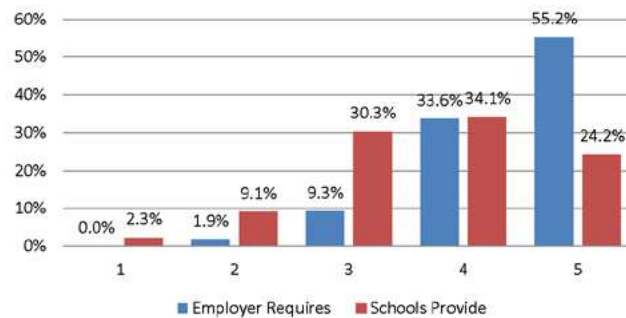
A majority of employers (55%) reported that they are already involved in some way with vocational schools. Of those who are not involved, 75% say that they would consider becoming involved. When surveyed about their interest in working with CVTE schools, those currently not involved with their local or regional vocational schools report a strong interest in doing so, suggesting that there is a deep pool of untapped potential support for CVTE among employers.

More than 57% of employers in the survey who are working with vocational schools say they are serving on CVTE advisory committees while 64% of those not currently involved with CVTEs say they would consider serving on CVTE advisory committees.

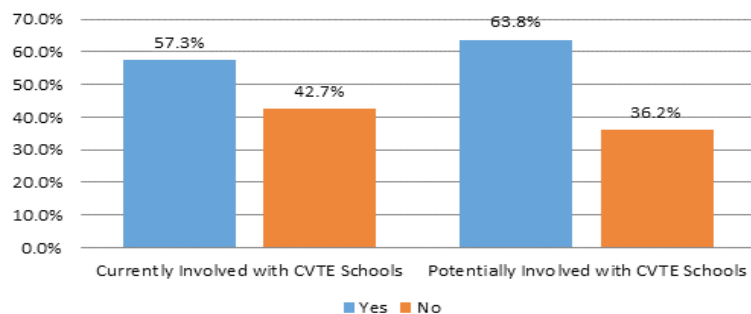
Speaking Competency



Soft Skills

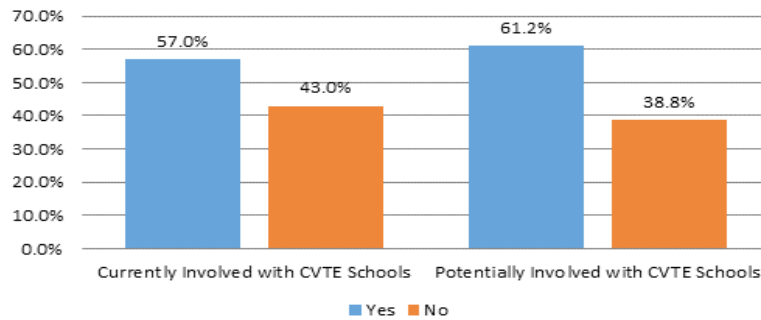


Serving on an Advisory Committee



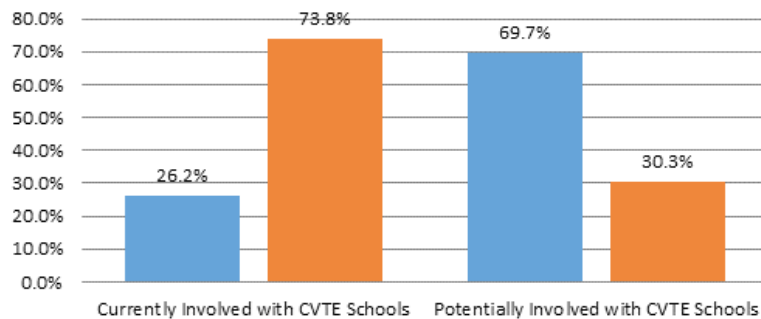
Nearly three in five (57%) employers currently involved with CVTEs are offering paid internships to CVTE students while an even larger number of currently not-involved employers would consider doing so.

Offering Paid Internships



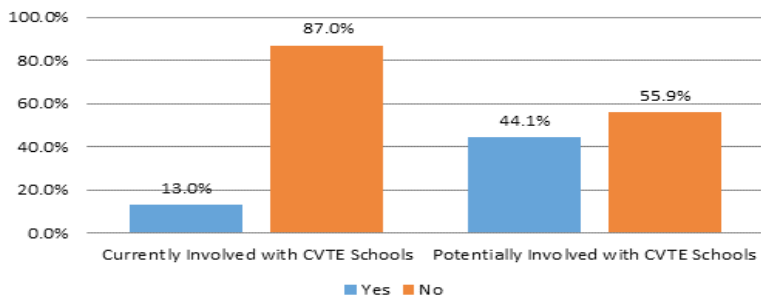
Similarly, nearly 70 percent of non-involved employers would consider offering unpaid internships to CVTE students.

Offering Unpaid Internships



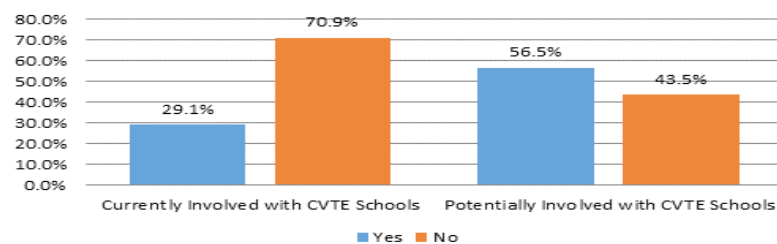
However, employers are not anywhere nearly as interested in offering internships in their companies to CVTE faculty. Only 13 percent of employers who are currently involved with CVTEs and less than half of those who are not currently involved are interested in providing such internships.

Offering Internships to CVTE Teachers



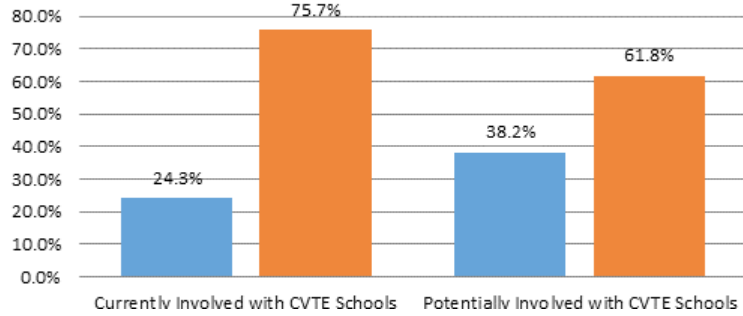
Nearly 30 percent of CVTE-involved employers would consider hosting an open house in their companies for CVTE students and their parents while more than half of non-involved employers would consider such involvement with the CVTEs.

Sponsoring Open Houses for Students and Parents



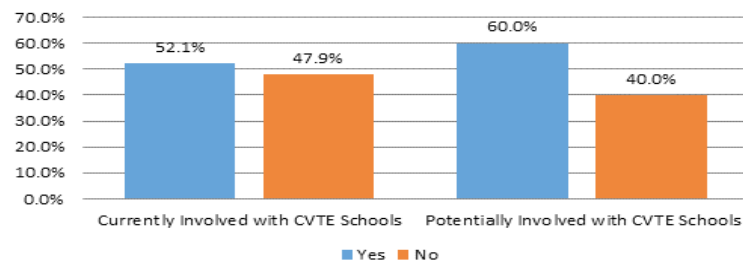
About a quarter of involved employers would be open to the idea of having CVTE students training on equipment in their companies while nearly 40 percent of non-involved employers would consider offering such an arrangement.

Allowing for Access to Equipment



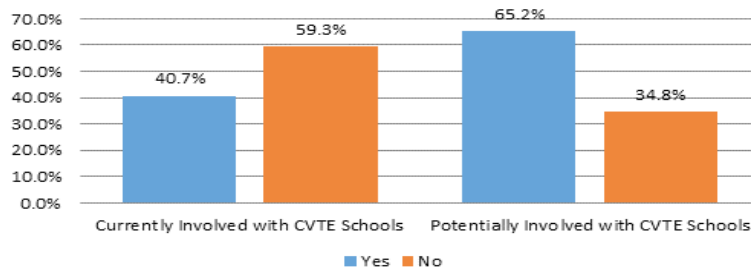
A strong majority of employers would be willing to help promote and market CVTEs.

Helping with Marketing and Promotion of CVTE



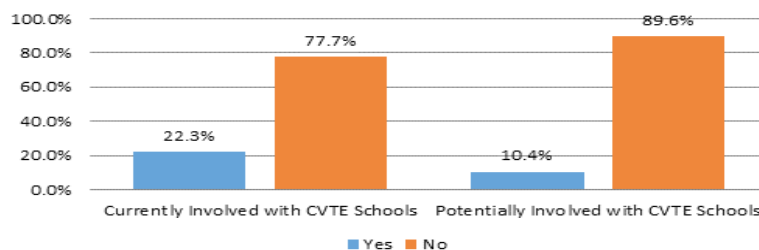
A large number would be willing to help CVTEs develop specialized training programs.

Partnering with CVTE Schools to Develop Customized Training



But very few employers would consider directly subsidizing CVTEs, presumably suggesting that state and local communities should be responsible for this level and type of support.

Providing Direct Funding to CVTE Schools



Almost half of respondents (49%) were familiar with “particularly outstanding” vocational high school programs, and identified them as follows.

Program by School	# of Employer Mentions
Assabet Valley Regional Technical High School	8
Culinary Arts	1
Electrical Technology	1
Electronics	1
Hospitality Management	2
Machine Technology	2
Metal Fabrication, Welding, and Joining Technologies	1
TV and Broadcast Media	1
Bay Path Regional Vocational Technical High School	8
Carpentry	1
Engineering Technology	1
Machine Technology	2
Blackstone Valley Regional Vocational Technical High School	5
Agriculture Technology	1
Machine Technology	1
Blue Hills Regional Technical School	17
Design and Visual Communications	1
Drafting Technology	1
Electronics	2
Engineering Technology	2
Health Assisting	2
Health Careers	1
HVAC	1
Information Technology	1
Metal Fabrication, Welding, and Joining Technologies	2
TV and Broadcast Media	1
Bristol-Plymouth Regional Technical School	2
Drafting Technology	1
Chicopee Comprehensive High School	1
Health Careers	1
Diman Regional Vocational Technical High School	4
Machine Technology	1
Essex Agricultural and Technical High School	3
Agriculture Technology	1
Culinary Arts	1
Health Careers	1
Machine Technology	1
Greater New Bedford Regional Vocational Technical High	2

Program by School	# of Employer Mentions
Lower Pioneer Valley Educational Collaborative	1
Culinary Arts	1
Hospitality Management	1
Lynn Vocational Technical Institute	2
Agriculture Technology	1
Culinary Arts	1
Health Careers	1
Madison Park Technical Vocational High School	4
Hospitality Management	1
McCann Technical School	3
Business Technology	1
Minuteman Regional High School	11
Automotive Technology	1
Enviromental Science and Technology	1
Horticulture/Landscaping	2
Hospitality Management	1
Montachusett Regional Vocational Technical School	2
Machine Technology	1
Plymouth South High School	1
Marine Technology	1
Roger L Putnam Vocational Technical Academy	5
Automotive Technology	2
Culinary Arts	1
Engineering Technology	1
Machine Technology	2
Silver Lake Regional High School	1
Carpentry	1
Smith Vocational and Agricultural High School	2
HVAC	1
South Shore Vocational Technical High School	1
Design and Visual Communications	1
HVAC	1
Southeastern Regional Vocational-Technical High School	3
Health Assisting	1
Tantasqua Regional Senior High School	2
Machine Technology	1
Tri-County Regional Vocational Technical High School	2
Machine Technology	1
Upper Cape Cod Regional Technical High School	2
Marine Technology	1
Westfield Technical Academy	7

Program by School	# of Employer Mentions
William J Dean Tech High School	1
Culinary Arts	1
Diesel Technology	1
Machine Technology	1
Worcester Technical High School	22
Automotive Technology	2
Computer Information Systems	1
Culinary Arts	1
Design and Visual Communications	1
Machine Technology	1
TV and Broadcast Media	1

Summary

The employer survey results suggest that employers are generally well-aware of the importance of the Commonwealth's vocational schools in helping to supply a workforce reasonably well-trained in technical and communication skills. In general, employers believe the vocational schools are doing a good job of educating students in basic competencies with the exception that a large majority would like to see the schools improve their instruction in the "soft skills" related to on-the-job behavior and etiquette. With increasing hiring standards, many employers would also like to see the vocational schools improve the technical competency of their graduates still further.

A majority of employers are involved with vocational schools, with a significant number sitting on CVTE boards and offering paid internships to vocational school students. Significantly, a large number of employers who are currently not involved with their regional vocational schools are willing to become involved.

All of these results suggest that a closer link between employers and the Commonwealth's vocational schools is not only to be encouraged, but that efforts to do so will likely be successful and beneficial.

SECTION III: CURRENT CVTE STUDENTS SURVEY

The student survey was distributed by administrators of regional CVTE schools and comprehensive high schools with CVTE programming to current CVTE students in their respective schools. A large number—3,208 students—responded. The distribution of respondents skews young: 37% freshmen, 60% sophomores and juniors, and 3% seniors and 2015 grads who likely graduated in January. Low numbers for seniors are probably due to both off-campus employment and “senioritis.” The students who participated in the survey live in the following towns and cities.

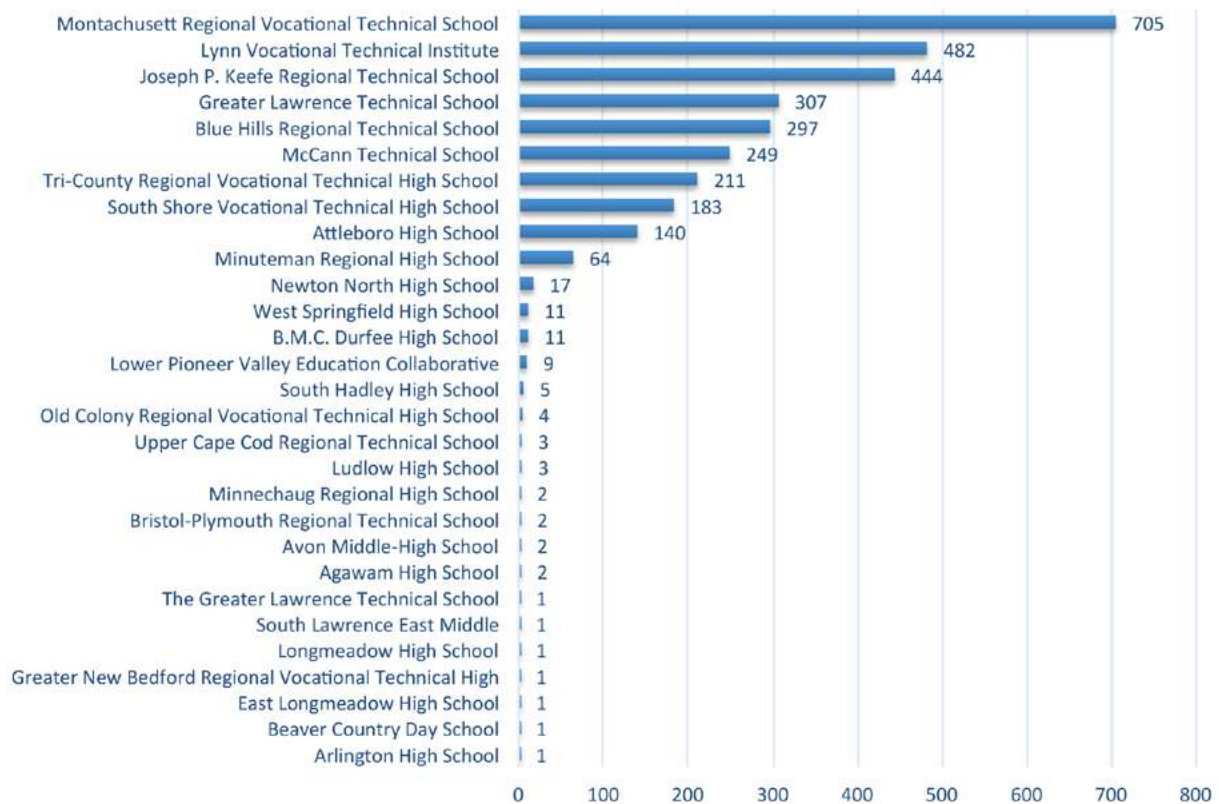
Home Communities of Student Respondents

Lynn	481	Arlington	15	Harvard	3	H-Town	1
Framingham	317	Norwood	15	Hinsdale	3	Hampden	1
Lawrence	235	Canton	14	Lexington	3	Middlebro	1
Fitchburg	196	Cheshire	14	Petersham	3	Millville	1
Attleboro	157	Newton	14	Searsburg (VT)	3	New Bedford	1
Randolph	80	Savoy	14	South Lawrence	3	Northbridge	1
Winchendon	78	West Springfield	13	Stamford (VT)	3	Orange	1
Adams	71	Medway	12	Bellingham	2	Otter River	1
North Adams	70	Fall River	11	Bolton	2	Paxton	1
North Attleboro	67	Hopkinton	10	Dalton	2	Peru	1
Gardner	61	Readsboro	10	East Longmeadow	2	Quincy	1
Methuen	61	Scituate	10	Lakeville	2	Reading	1
Braintree	60	Seekonk	10	Lancaster	2	Revere	1
Franklin	54	Leominster	9	Longmeadow	2	Richland	1
Holbrook	52	Phillipston	9	Maynard	2	Rochester	1
Rockland	51	Princeton	9	Medford	2	Sagamore	1
Ashland	46	Williamstown	9	Monroe	2	Salem	1
Abington	43	Waltham	8	Needham	2	Searsburg	1
Athol	41	Boston	7	Pittsfield	2	South Barre	1
Westminister	41	Millis	7	Stamford	2	Sudbury	1
Lunenburg	40	Norfolk	7	Stoneham	2	The burg	1
Nartick	38	Royalston	7	Wayland	2	Townsend	1
Ashburnham	31	Watertown	6	Willbraham	2	Uxbridge	1
Dedham	30	Wrentham	6	Windsor	2	West Newton	1
Holden	30	Jefferson	5	Worcester	2	Weymouth	1
Hubbardston	30	Lanesborough	5	Bedford	2		
Sterling	30	South Hadley	5	Berkshire	1		
Whitman	30	Wellesley	4	Blackstone	1		
Holliston	28	Andover	4	Bourne	1		
Hanson	27	Belmont	4	Bridgewater	1		
Tempelton	27	Florida	4	Burlington	1		
Clarksburg	26	Ludlow	4	Carver	1		
Milton	24	Medfield	4	Dover	1		

Student respondents attend 28 of the state's 70 Chapter-74 approved high schools. Although the reporting schools are somewhat evenly distributed geographically, with eight representing the more sparsely populated western half of the state, the majority of respondents hail from the Metro Boston region. Nearly 57% of respondents were male, 43% were female. This tracks closely with statewide figures for students enrolled in VTE schools and programs, which are 55% male and 45% female.

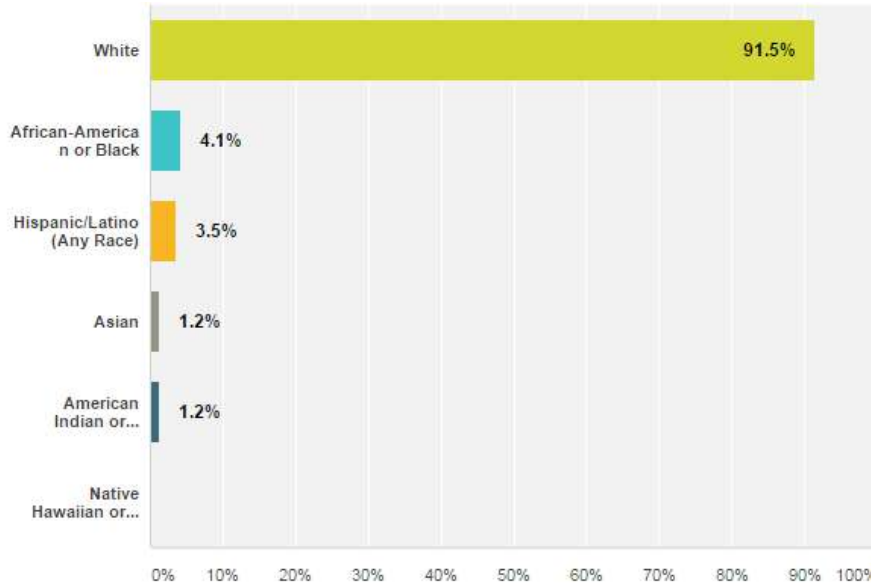
They attend the following schools:

Number of Student Respondents per School



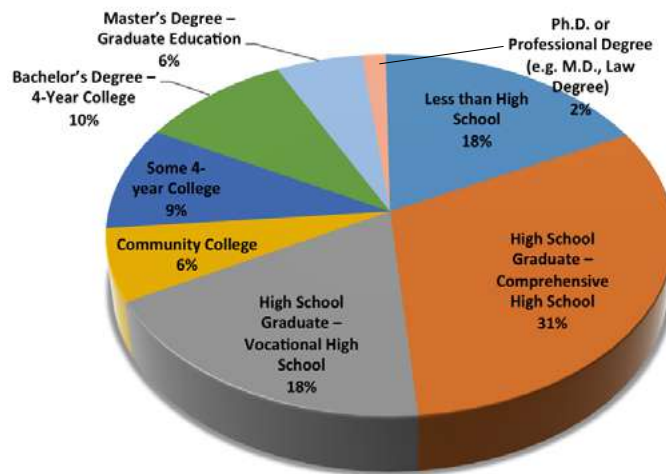
Race/Ethnicity of Student Respondents

In terms of race and ethnicity, students are predominately white (65%), followed by Hispanic or Latino of any race (31%), and African-American or Black (9.5%). This distribution tallies out to about 20% fewer whites, 20% more Hispanics, and about the same percentage of African-Americans proportionate to the Massachusetts population. Asians are underrepresented, and “Native Hawaiian and other Pacific Islander” and “American Indian and Alaska Native” are slightly overrepresented.



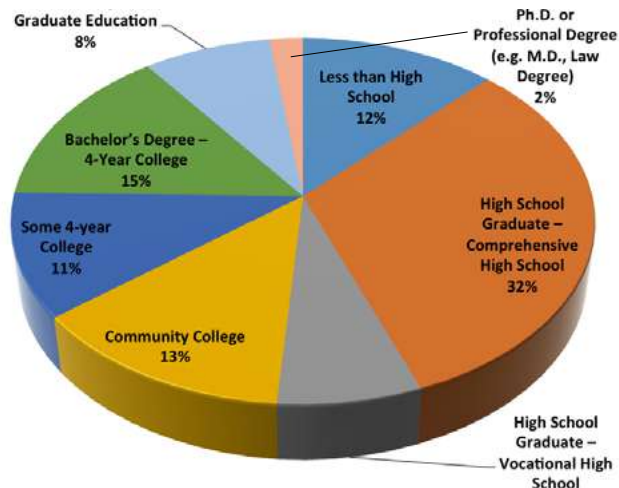
Father's Highest Level of Education

Of the nearly 70% of student respondents who knew their father's highest level of education achievement, two-thirds (67%) report that their fathers had no more than a high school education. Nearly one in five (18%) report that their fathers had attended a vocational school. One out of six fathers completed college or had obtained an advanced degree



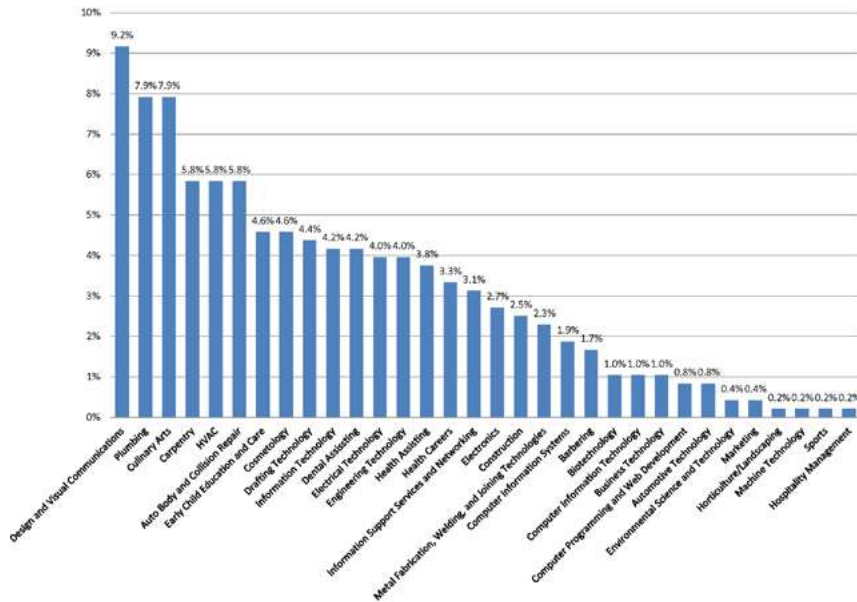
Mother's Highest Level of Education

Vocational school student mothers tend to be somewhat more educated than their fathers. Nearly half of the mothers had schooling beyond the high school degree and one in four (25%) had at least completed college



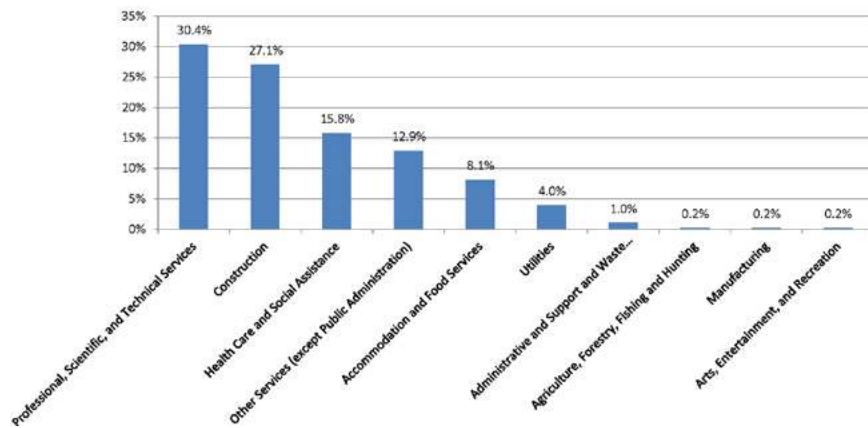
Current CVTE Student Majors (Programs)

Current vocational school students are enrolled in a highly diverse set of majors. Nearly one in eleven is majoring in design and visual communications, nearly 8% in both plumbing and the culinary arts, and nearly 6% in carpentry, HVAC, and auto body.



Current CVTE Student Majors by Industry

More than 30% of current CVTE students are majoring in programs that can lead them into professional, scientific, and technical services with another 27% majoring in programs that will permit them to go into construction. One in six students are destined for the health care and social assistance sector. Smaller numbers are headed into the hotel and restaurant sector. At present only a tiny fraction are majoring in courses that will lead them into manufacturing employment.



Reasons Why Students Attend a Vocational High School or Participate in Vocational Programming in a Comprehensive High School

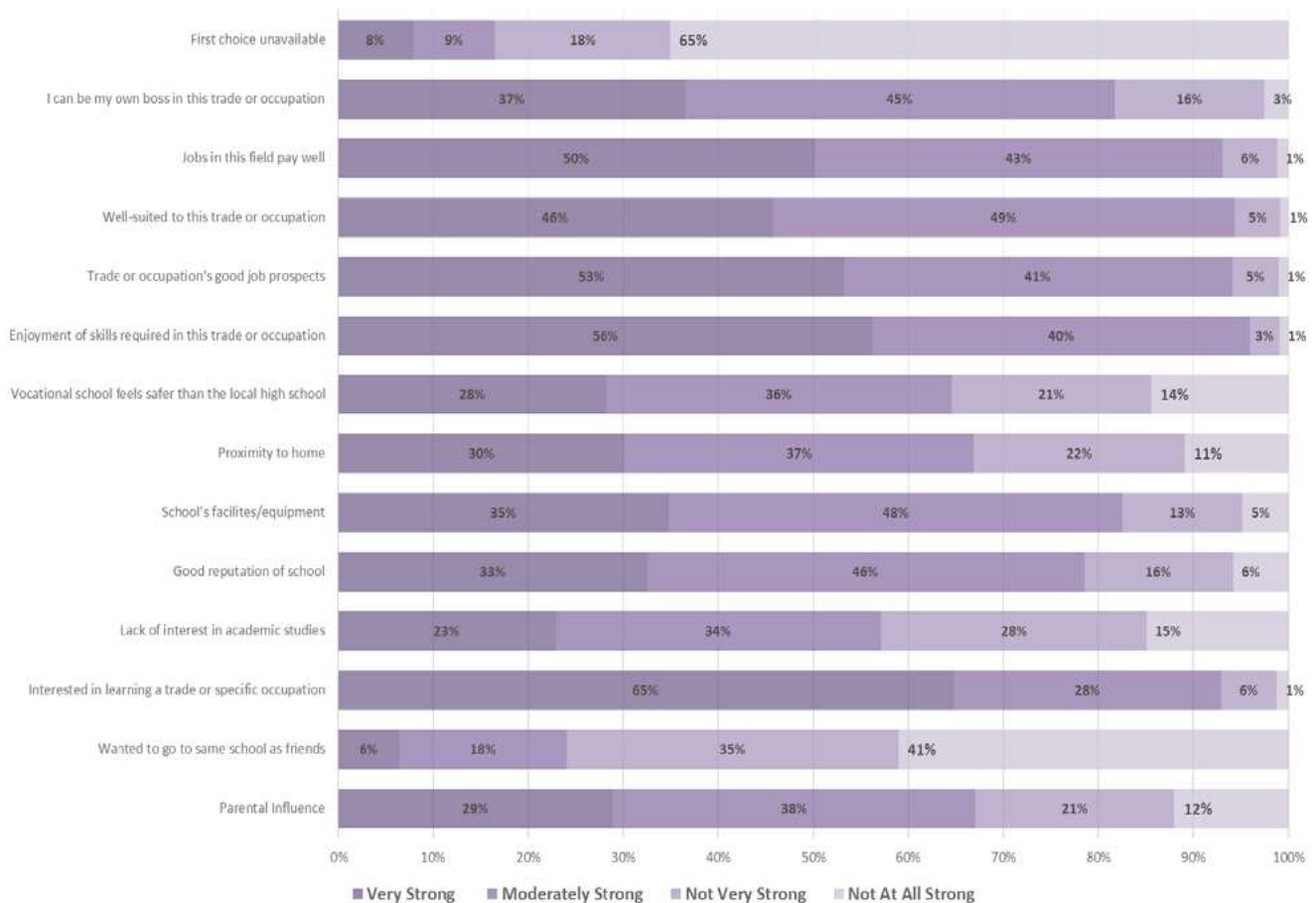
More than three-fourths of current vocational students say that their parents had a moderately strong to very strong role to play in encouraging them to attend a CVTE school. In contrast, very few vocational students suggest that they were motivated to attend a CVTE school by a desire to stay with their friends.

The most important reason to attend a vocational school, according to current students, was their desire to learn a specific occupation or trade. More than 90% suggest that this was a very strong or moderately strong reason for choosing a vocational high school.

Nearly 80% of current vocational school students suggest that the strong reputation of their vocational school helped encourage them to attend and more than that percentage are happy with the vocational facilities at their school.

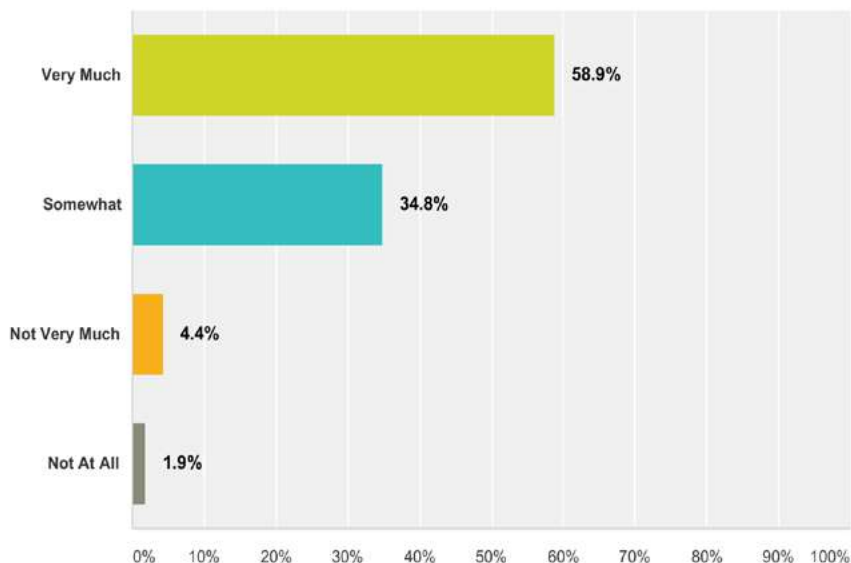
More than two-thirds are happy with the fact that their school is near their home, and almost that many report that they feel safer at their vocational school than they would at their local high school.

When students were given an opportunity to provide another reason for enrolling in CVTE, aside from the ones provided in the survey, only one additional theme emerged. Five or so respondents thought they would use skills acquired through CVTE in some capacity but that they did not plan to make a career out of them.



Extent that Vocational Programming Meets Student Expectations

With nearly all (3,089) students responding, a large majority report that their programs meet their expectations: 59% Very Much and 35% Somewhat, for a total of 94%. Student satisfaction level with the quality of their vocational programs, in other words, is extremely high.

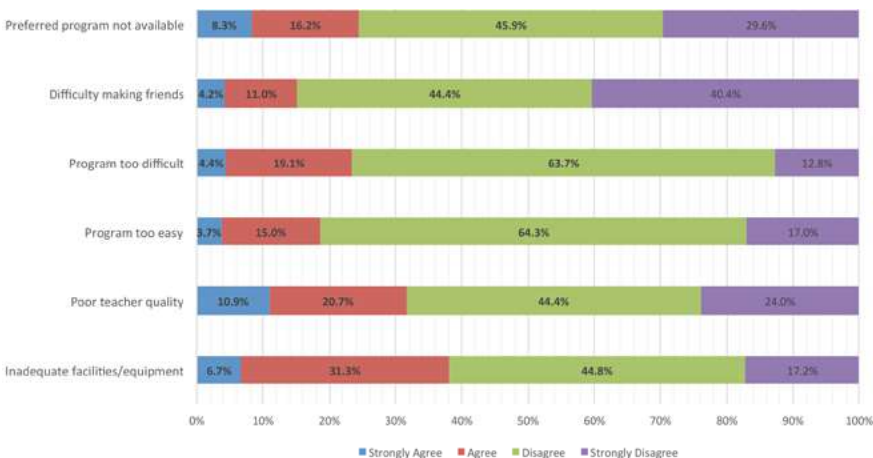


Reasons for Lower Student Satisfaction

We asked, if a student's program is failing to meet his or her expectations, why? In a perfect world, there would be few responses to the choices we provided, since so many respondents claimed they were satisfied. But since nearly 35% said their programs "somewhat" met their expectations, we suspect that some respondents used this question to convey not that their programs "failed," but how they might be further improved, since most responded consistently by saying that they "disagree" or "strongly disagree" with our negative statements.

Despite their general satisfaction, if not outright enthusiasm for their schools, a substantial proportion believe that their schools could be improved. Nearly four in ten believe their schools could use better or more modern facilities and equipment. More than 30% are concerned about poor teacher quality.

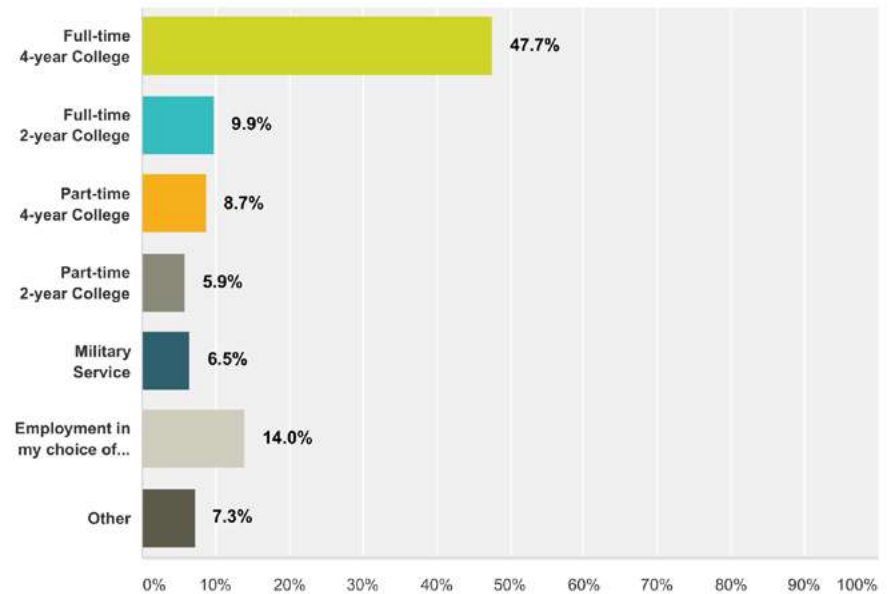
More than three out of four feel their program of study is about the right level of difficulty and rigor.



Envisioning Life after High School

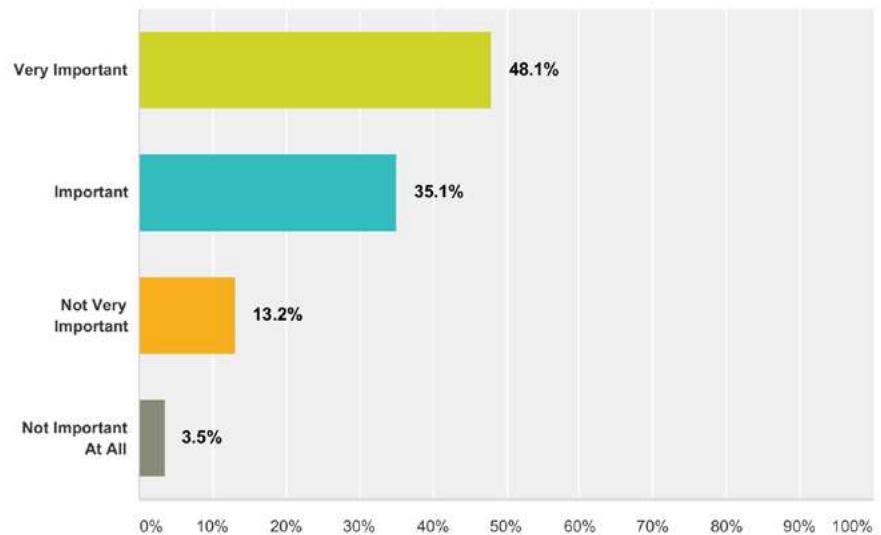
A clear majority of current students plan to continue their schooling beyond high school. Nearly half expect to go full-time to a four-year college after high school graduation with another 9% expecting to attend a four-year college on a part-time basis. Another 16 percent expect to go on to a two-year college either on a full-time or part-time basis. As such, post-graduation plans of vocational school students are likely not much different than those of comprehensive school students.

Student Respondents' Post-High School Plans



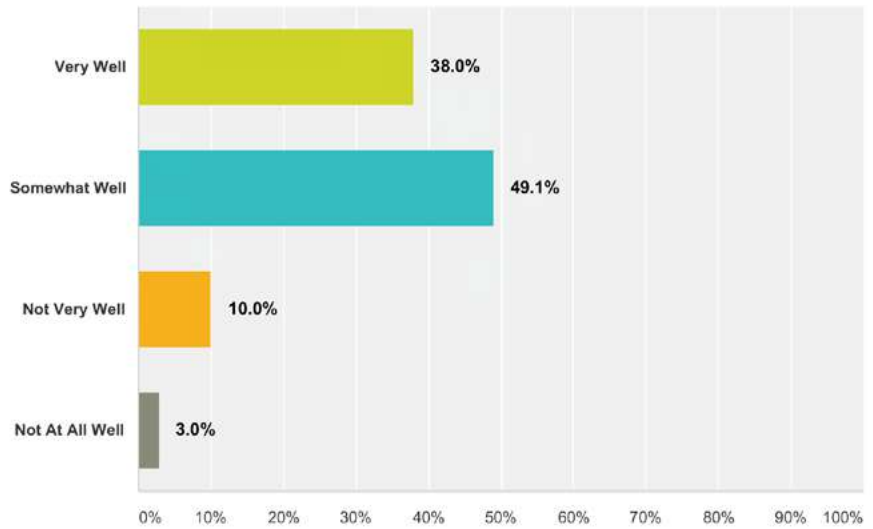
Importance of a College Education to Getting a Good Job

The percentage of students expecting to attend four-year college full-time aligns almost perfectly (48%) with the percentage of students who believe that completing a college education is necessary for a young person to get a good job in today's economy. Also striking is that a full 83% think college is important or very important. Clearly, these students do not see CVTE as a form of secondary education that precludes or tracks away from earning a bachelor's degree.



Extent to Which CVTE School Is Preparing Students Who Want to Attend College

On the whole, students feel well-served by their schools' academic preparation for college-level work. Almost half of respondents think that their school is doing "somewhat well" in preparing them to pursue college should they wish to, while almost 38% think they are doing "extremely well." Together, these numbers align within just 4 percentage points with the percentage of students who believe that college is important to a young person's future economic well-being, which suggests that these CVTE students believe their schools are doing well in an area that they claim is objectively important.



Summary

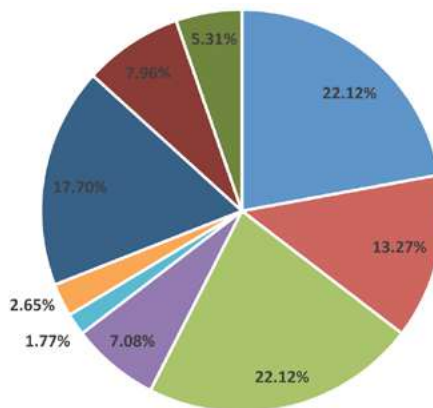
Our survey suggests that current vocational school students are well satisfied with their school experience. They believe they are being well-trained for good jobs once they graduate and well-prepared to continue their education beyond high school. Essentially, current students overwhelmingly give high marks to the schools they attend.

SECTION IV: RECENT ALUMNI SURVEY

Approximately 366 graduates participated in this study. Their graduation dates spanned the years 1961 to 2015. Because labor market conditions, educational structures, and cultural attitudes have changed dramatically over that time, we confined our analysis to the 129 respondents who graduated in 2005 or later.

Percentage of Alumni Respondents by High School

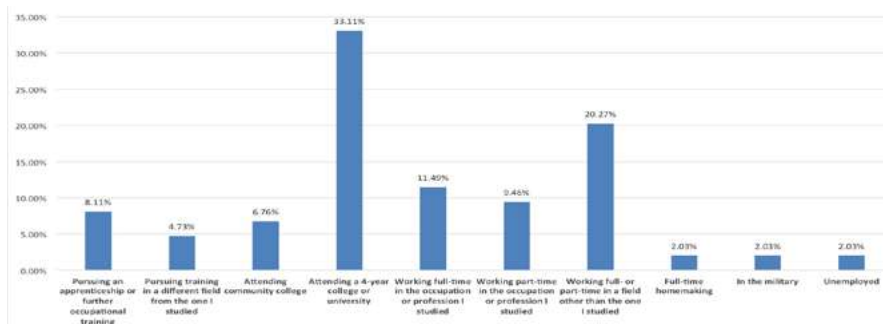
Almost 95% of respondents attended high schools located in the eastern half of the state. (The other 5% graduated from one school: Smith Vocational and Agricultural High School in Northampton.)



- Attleboro High School
- Blue Hills Regional Technical School
- Joseph P. Keefe Regional Technical School
- Minuteman Regional High School
- Old Colony Regional Vocational Technical High School
- South Shore Vocational Technical High School
- Tri-County Regional Vocational Technical High School
- Upper Cape Cod Regional Technical School
- Smith Vocational and Agricultural High School

What Recent (2005 and later) CVTE Grads Are Doing Now

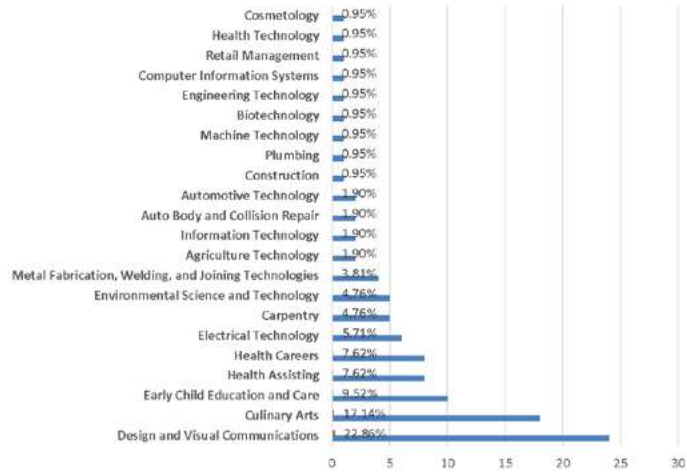
Respondents report a fairly even breakdown between those attending four-year college or university (33%) and those working full- or part-time in the occupation or program they studied or pursuing further occupational training in that field (29%). Another 25% are working full- or part-time or pursuing training in a field different from the one studied in high school. Seven percent are attending community college. Three percent are full-time homemakers, in the military, or unemployed.



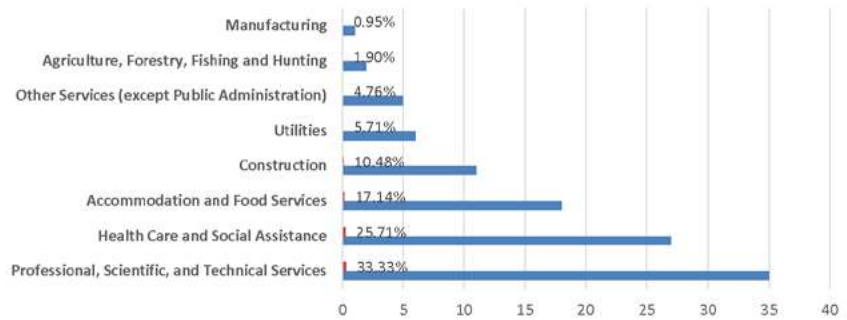
Alumni Vocational Programs

Close to 40% of the alumni surveyed were enrolled in just two programs: Design and Visual Communications and Culinary Arts. A third were in fields classified by the federal government as Professional, Scientific, and Technical Services, while less than 12% were involved in the traditional “blue-collar” trades of Manufacturing and Construction.

Programs

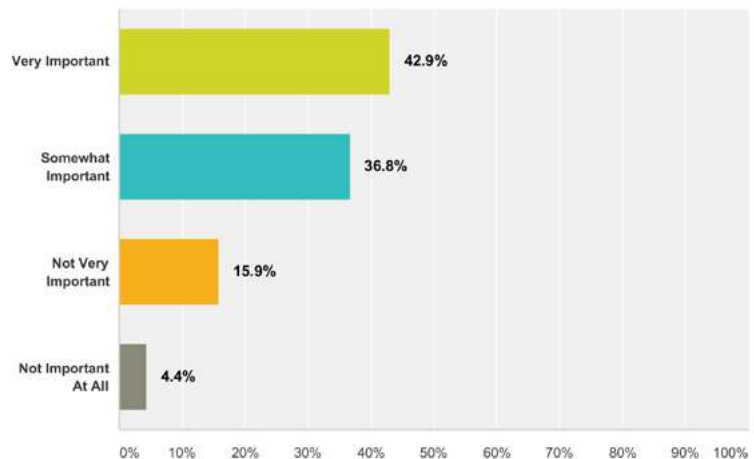


Programs By NASICS Code



How Recent Alumni Rank the Importance of a College Education to Getting a Good Job

Nearly 84% of recent graduates think that completing a college education is important to getting a good job, a figure that is virtually the same for current students (83%).



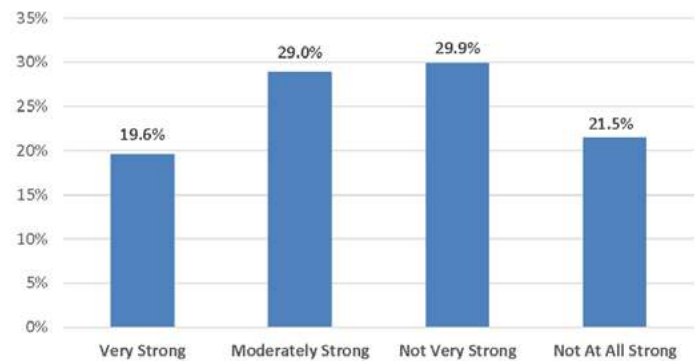
Reasons Why Alumni Chose CVTE Over Traditional High School

Overall, enjoyment of and interest in a particular trade or occupation and the skills associated with it are by far the chief motives for choosing CVTE programs and schools, among both alums and current students. In fact, when asked what drew them to vocational education, alumni responses were remarkably similar to those of current students, with only one strong variation: parental influence. Among CVTE alumni, just under half (49%) responded that parental influence was very important or important in their choice to attend a vocational school. This is significantly less than the 67% of current students who report that parental influence was important to them.

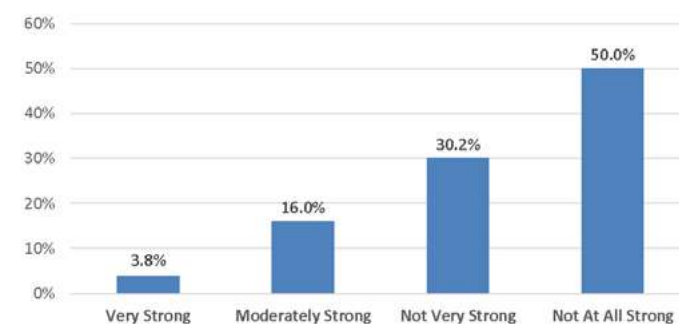
In contrast, only 20% of CVTE alumni suggest that they attended vocational schools because their friends were planning to attend, which is in line with the survey results for current students.

As with current students, the strongest factor influencing CVTE graduates to attend vocational school was their interest in learning a specific trade or occupation. More than two-thirds (68%) of alumni rate this factor very important while another 27% rank it as important.

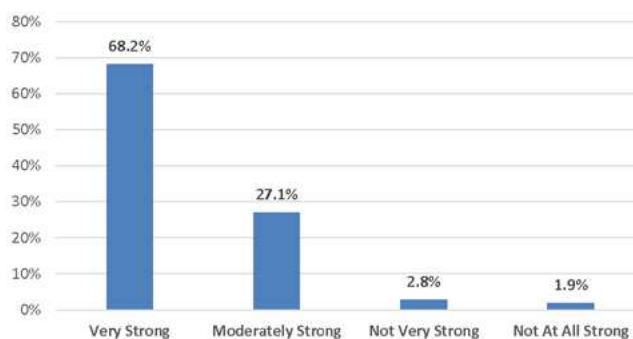
Parental Influence



Wanted to Go to the Same School as Friends

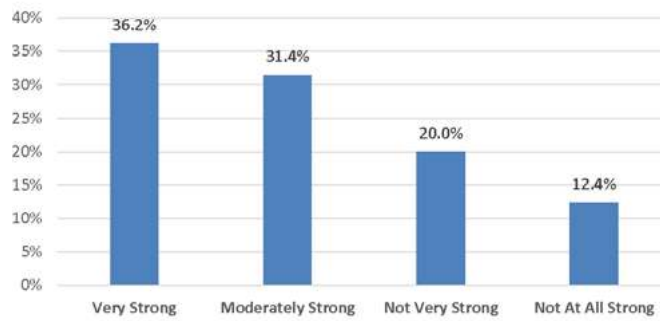


Interested in Learning a Trade or Specific Occupation



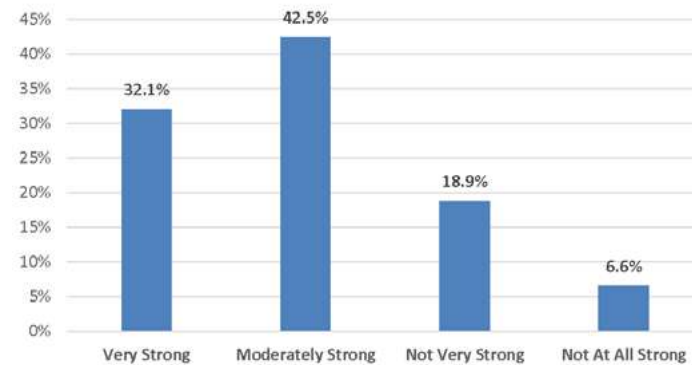
About two-thirds of alumni were not interested in pursuing ordinary academic studies, somewhat higher than the 57% of current students who lack such interest.

Lack of Interest in Academic Studies



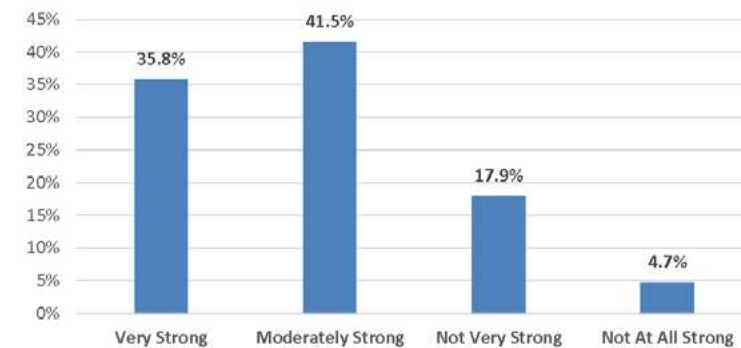
The good reputation of the school was a strong factor for 75% of alumni, which aligns with current students' assessment of this factor at 79%.

Good Reputation of School



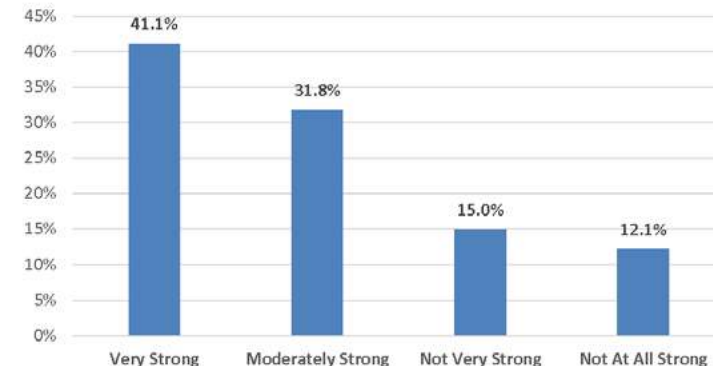
Three-quarters also were drawn to their school's excellent modern facilities and equipment. Current students come in slightly higher on their satisfaction with their school's facilities: 83%.

School's Excellent Facilities/Equipment



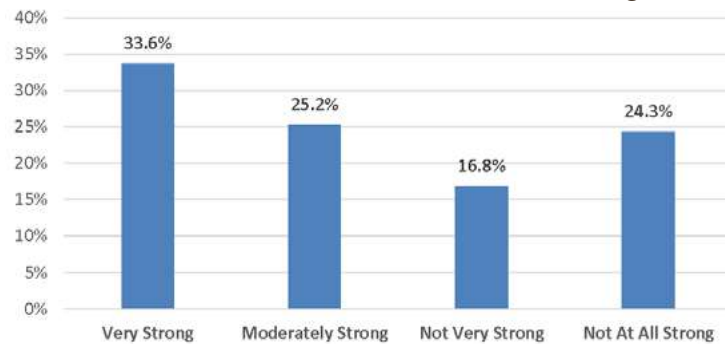
Proximity of the school was important to about three-quarters (73%) of alumni, slightly higher than it is for current students (67%)

Proximity to Home



Safety was a factor for 59% of alumni, slightly less than for current students: 67%.

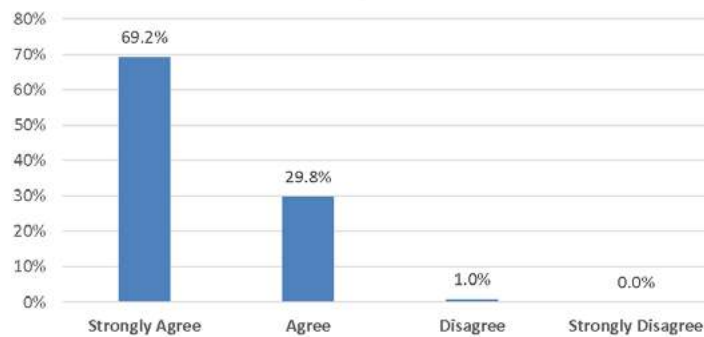
Vocational School Felt Safer Than the Local High School



Reasons Why Alumni Chose Their Vocational Programs

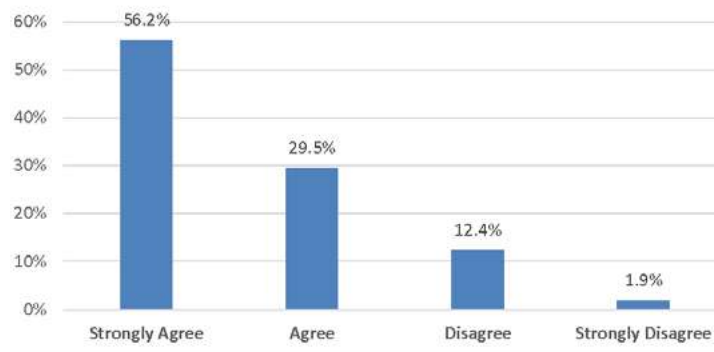
Over the past ten years, students' reasons for choosing the programs they graduated from have not changed all that much either. Nearly 100% of alumni and 96% of current students report enjoying the skills associated with their program as a factor in choosing that field.

Enjoyment of Skills Required in This Trade or Occupation



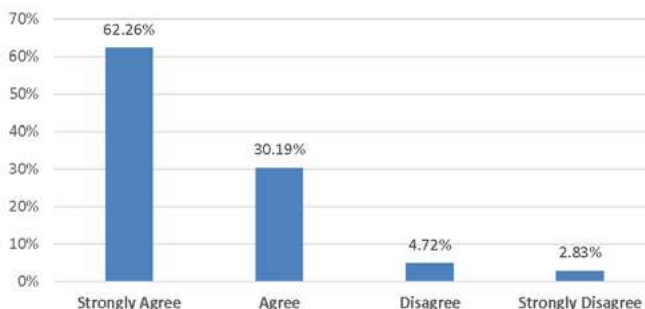
More than 86% reported good job prospects as an important factor, somewhat higher than the 74% of current students who were drawn to a trade or occupation's good job prospects—perhaps reflecting the still unstable state of the job market for younger workers post-Great Recession.

Trade or Occupation's Good Job Prospects



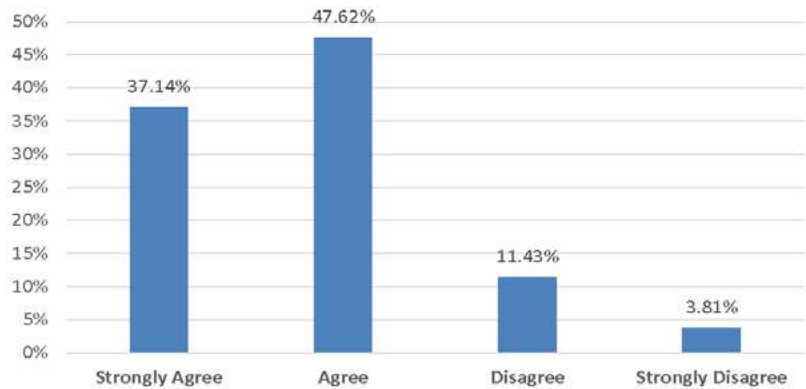
High percentages of both alumni (92%) and current students (94%) report that compatibility between their skills and chosen trade or occupation explains why they chose their high school program.

Well Suited to this Trade or Occupation



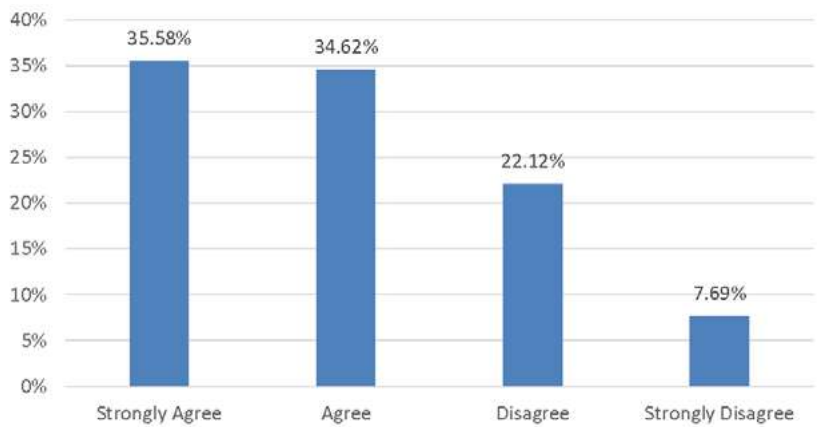
A full 85% of alumni say good pay was a motive for choosing their vocational program, while a slightly higher percentage (93%) of today's students suggest this was a key motive.

Jobs in This Field Pay Well



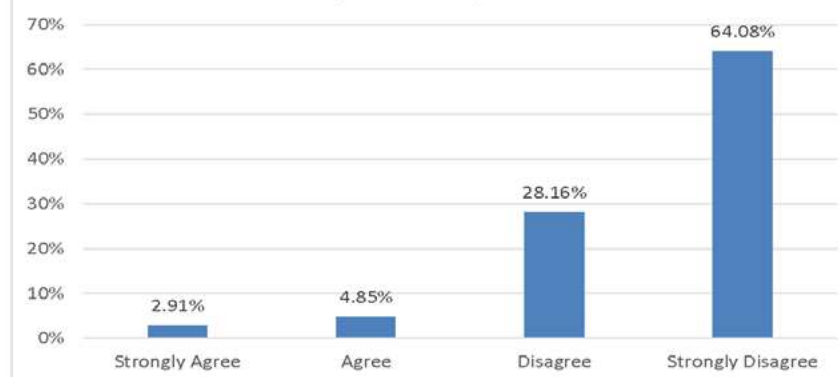
More than 70% of alums were drawn to their program because they could work independently in that occupation. Current students are even more attracted to that prospect (81%).

I Can Be My Own Boss in This Trade or Occupation



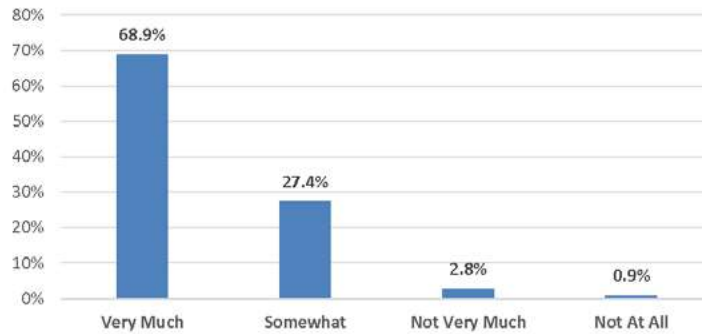
Only 8% of alumni did not get into their first choice program at their vocational school compared with 16% of current students. This suggests that limited space in particular programs is reducing student choice in the Commonwealth's vocational schools.

First Choice Unavailable



Extent to Which Programs Met Alumni Expectations

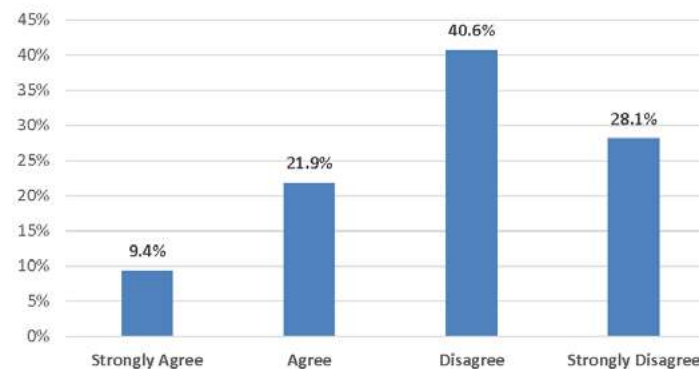
CVTE alums (96%) believe that their vocational programs very much met or somewhat met their expectations—about the same level of satisfaction as current students.



Reasons Alumni Programs Expectations Were Not Met

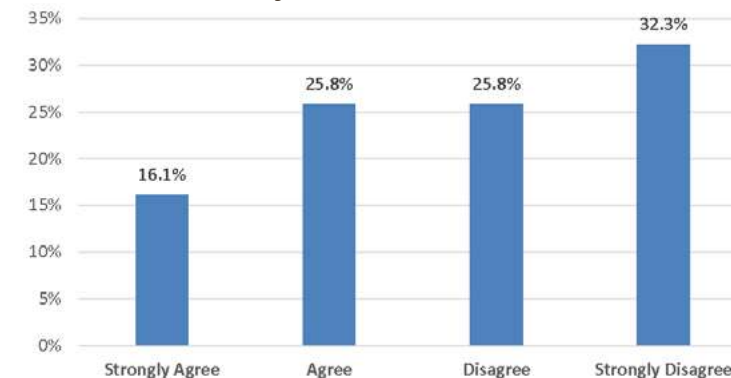
Among those alums whose program expectations were only somewhat or not met, 31% attributed their disappointment to inadequate facilities and equipment. Among current students, that figure has risen to 38%.

Inadequate Facilities/Equipment



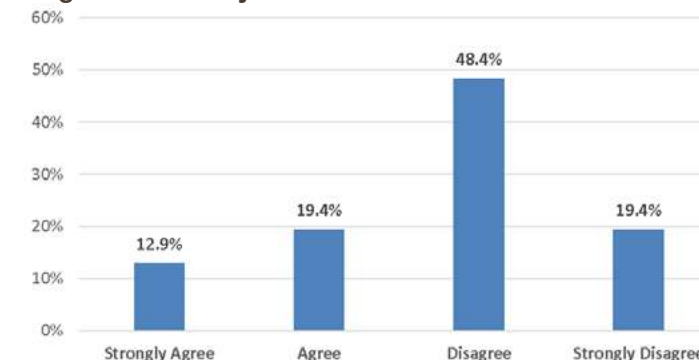
While it would appear that there is a need for upgrading facilities and equipment, student satisfaction with teacher quality has improved. Where 42% of alumni blame their disappointment on poor teacher quality, only 32% of students do so.

Poor Teacher Quality



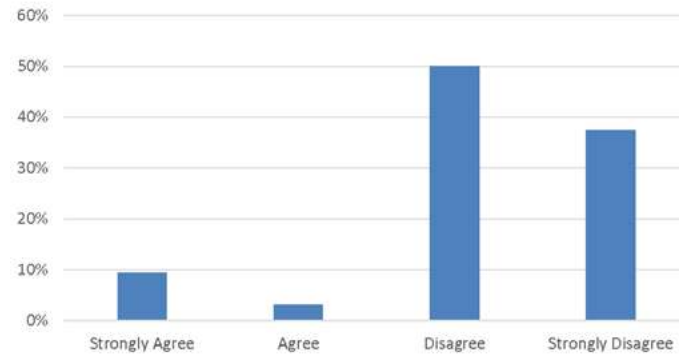
About one-third of CVTE graduates thought their program was too easy while 19% of current students feel insufficiently challenged.

Program Too Easy



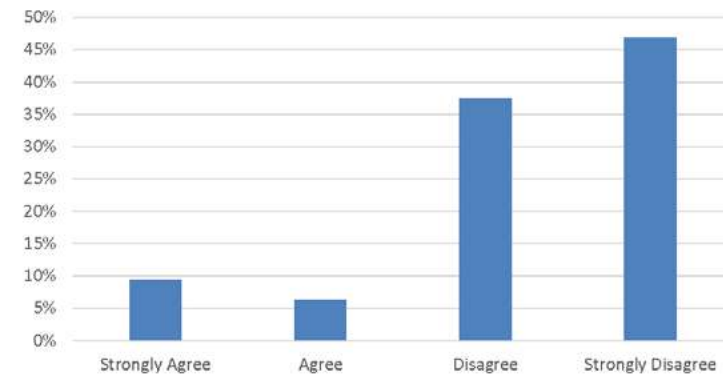
Fewer alumni (12%) thought their program was too difficult, but about twice as many current students (24%) think so. These answers to our two program-difficulty questions suggest that current students may be struggling more with their programs than alumni did—or remember doing.

Program Too Difficult



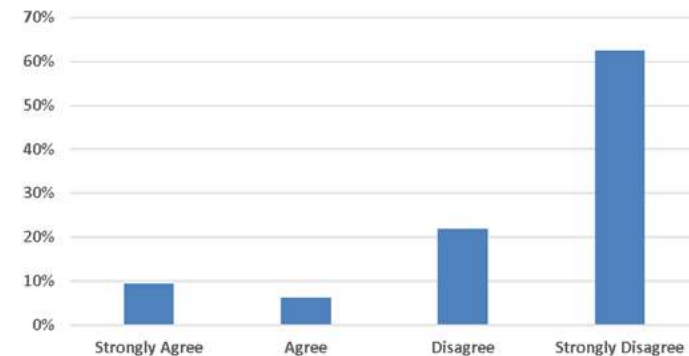
Few (13%) report having difficulty making friends as a reason for their programs' not meeting their expectations, about the same as current students (15%).

Difficulty Making Friends



Few alumni (15%) report that they found their program wanting because their preferred program was unavailable, a figure that has risen to 24% among current students. These numbers are consistent with others in this survey, along with other published reports, suggesting again the need for expanding CVTE.

Preferred Program Not Available



Summary

As was the case with the current students we surveyed, nearly all CVTE alumni cite learning a trade or specific occupation and enjoying the skills it requires as their leading reasons for enrolling in a CVTE school or program. Indeed, the only significant difference in their motives for entering CVTE programs is that current students are more heavily influenced by their parents.

By wide margins, both former and current students believe their specific programs met or meet their expectations, though current students are less enthusiastic—mainly, it appears, due to less-than-adequate facilities and/or equipment.

SECTION V: SCHOOL ADMINISTRATORS SURVEY

A total of 80 administrators from 32 Chapter-74 approved schools out of 70 in the Commonwealth participated in this survey. Regional CVTE schools are most heavily represented, with 22 of 26 regional school administrators responding. In our analysis of the survey data, we weighted responses of schools that are overrepresented as needed. Altogether, the following schools are represented:

Respondent Schools	Number of Administrator Respondents
Joseph P. Keefe Regional Technical School	8
Lynn Vocational Technical Institute	5
Montachusett Regional Vocational Technical School	
Bay Path Regional Vocational Technical High School	4
Greater New Bedford Regional Vocational Technical High	4
Minuteman Career and Technical Regional High School	4
Pathfinder Regional Vocational Technical High School	4
South Shore Vocational Technical High School	4
Blue Hills Regional Technical School	3
Lower Pioneer Valley Career and Technical Education Center	3
Old Colony Regional Vocational Technical High School	3
Smith Vocational and Agricultural High School	3
Tri-County Regional Vocational Technical High School	3
Upper Cape Cod Regional Technical School	3
Assabet Valley Regional Technical High School	2
Madison Park Technical Vocational High School	2
Putnam Vocational Technical Academy	2
Attleboro High School	1
Bristol County Agricultural High School	1
Bristol-Plymouth Regional Technical School	1
Dighton-Rehoboth Regional High School	1
Franklin County Technical School	1
Leominster Center for Technical Education Innovation	1
Martha's Vineyard Regional High School	1
McCann Technical School	1
Medford Vocational Technical High School	1
Norfolk County Agricultural High School	1
Northeast Metropolitan Regional Vocational High School	1

Program Demand — Past, Present, and Future

Vocational school administrators were asked about the demand for specific training programs and how they think this demand will change over time. Here are the results of that assessment.

At the present time, administrators suggest that the five programs with the highest demand are:

- Electrical Technology
- Culinary Arts
- Health Careers
- Health Assisting
- Automotive Technology

This is in contrast to the demand ten years ago when the leading programs included cosmetology and carpentry with less demand for programs in the health field:

- Culinary Arts
- Automotive Technology
- Cosmetology
- Carpentry
- Electrical Technology

Now, clearly reflecting changes in anticipated industry need, administrators believe that five years from now the greatest programmatic demand will have shifted to:

- Health Careers
- Health Assisting
- Machine Technology
- Information Technology
- Engineering Technology

In response, administrators suggested they would like to shift resources into precisely these programs if they have no additional funding for an expanded curriculum. At the same time, they see the need under current funding levels to expand five other programs including:

- Legal and Protective services
- Dental Assisting
- Biotechnology
- Engineering Technology
- HVAC

In order to fund these programs without additional funding, administrators would roll back programs in:

- Design and Visual Communications
- Business Technology
- Auto Body and Collision Repair
- Drafting
- Automotive Technology

With increased funding over the next five years, administrators would work to expand the following programs:

- Health Careers
- Machine Technology
- Engineering Technology
- Health Assisting
- Information Technology

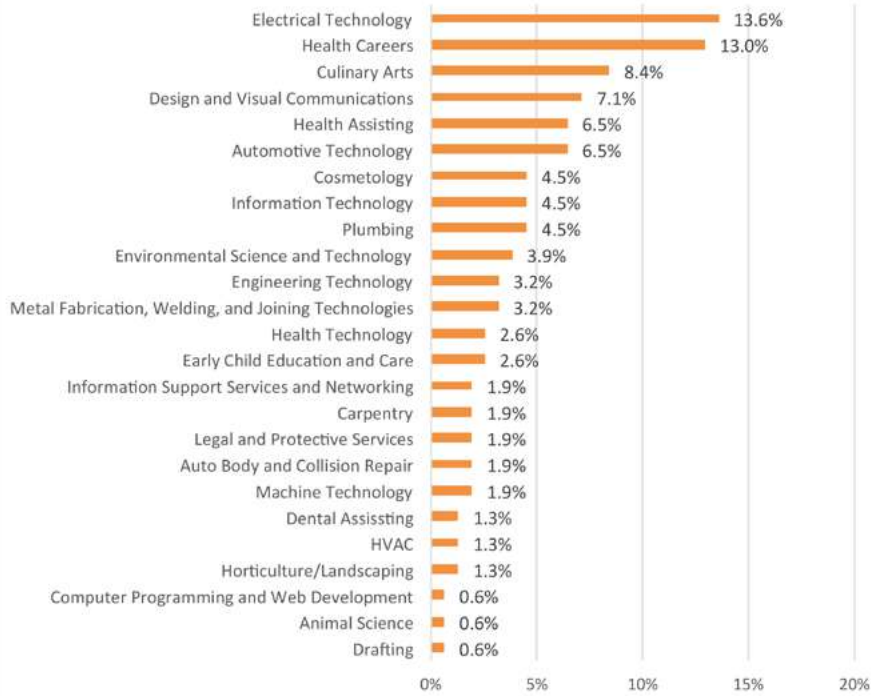
They would also introduce the following programs in schools lacking them.

- HVAC
- Legal and Protective Services
- Engineering Technology
- Machine Technology
- Biotechnology

Currently Oversubscribed Programs

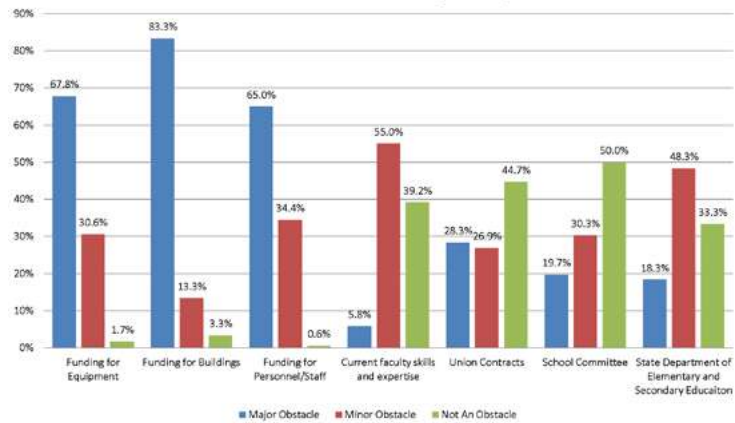
The three most highly oversubscribed programs (35%) are in electrical technology, health careers, and culinary arts. The least oversubscribed programs are in computer programming and web development, animal science, and drafting, which together comprise less than 2% of the whole.

CVTE schools are doing a fairly good job of placing students in their first-choice vocational programs. On average, 42% of the administrators we surveyed report that 91% or more of their students are enrolled in their first choices; 26% report that 86-90% are so enrolled. However, 32 percent report that 85% or fewer of their students are so enrolled. Program choice and availability are, of course, a matter of both curriculum and capacity. To the extent that capacity is an issue, administrators' answers to questions about obstacles to expansion are illuminating.



Obstacles to CVTE School or Program Expansion

A large majority of administrators, 82%, maintain that their schools face obstacles to expansion. By far, the biggest obstacles lay in funding, specifically and in descending order for buildings (85%), equipment (64%), and personnel (60%). Only five percent of administrators feel their faculty skills and expertise pose a major obstacle to the success of their schools while no more than one in five consider union contracts, school committee interference, and the Commonwealth's Department of Elementary and Secondary Education (DESE) to be a major obstacle.



What also appears to be a major obstacle to the expansion of vocational education in the Commonwealth is the requirement that towns served by a regional CVTE high school must sign off on all funding approvals. As one administrator put it regarding their own school:

... it is very difficult to get all 18 member cities and towns to approve an MSBA application, especially since the reimbursement rate sits at approximately 65%. Asking cities and towns to absorb more than 30% of large scale (and much needed) renovations will be impossible, especially when only a handful of students are coming from some of the smaller towns in our district. We really need a larger reimbursement rate, making the ask more reasonable.

Administrators would also like to see DESE requirements for licensure made more flexible.

Other administrators note that limited building capacity can limit further program expansions.

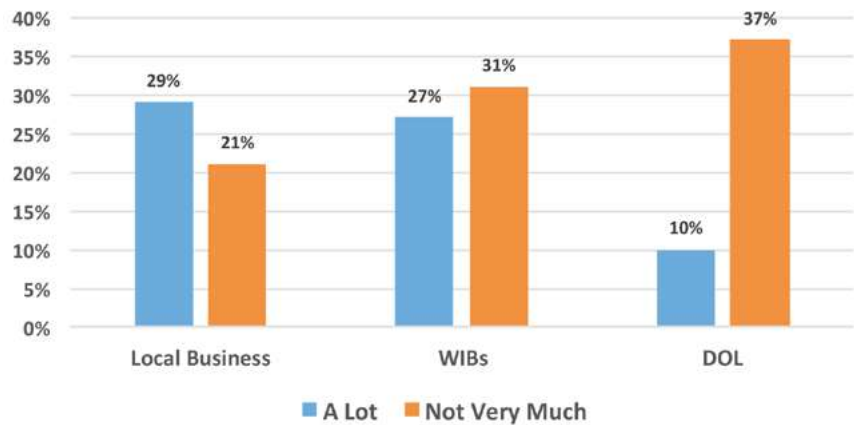
A very large percentage of administrators (93%) reported that their schools participate in community college partnerships for which students can receive formal credit. However, the majority (64%) report that 10 percent or fewer of their students take advantage of such programs.

Most Useful Program Development Partners

Finally, we asked administrators how much their Workforce Investment Boards, the state Department of Labor, and local business groups shared workforce information useful for guiding program development in their schools. The responses to this inquiry were quite mixed. Of the three groups, local business groups were the most helpful and the Commonwealth's Department of Labor least so.

These survey results suggest that it would behoove the Massachusetts

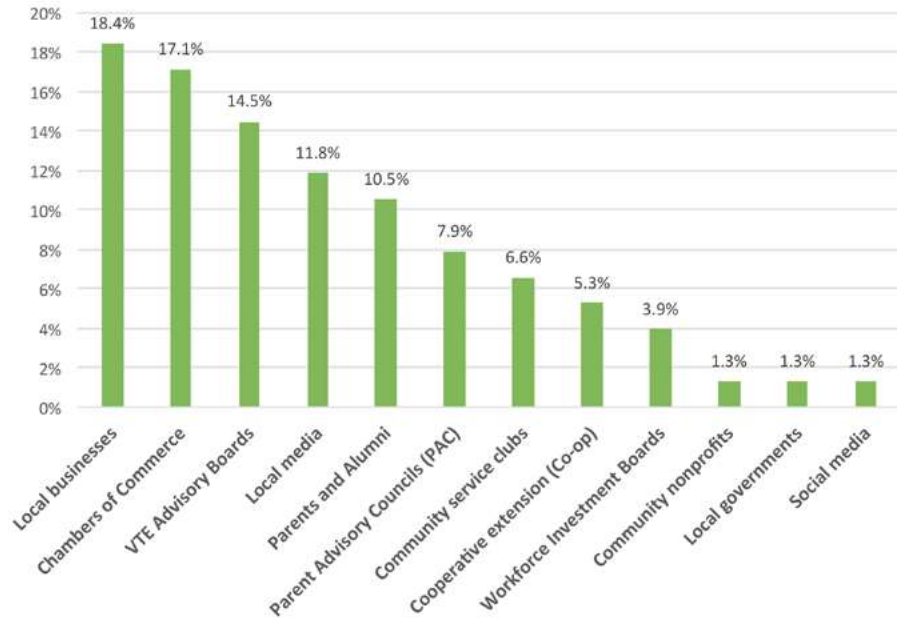
DOL, the WIB program, and the Massachusetts Association of Vocational Administrators to conduct a frank assessment of strengths and weaknesses in information gathering and delivery, and to follow up with an implementable improvement plan.



Most Successful Marketing Partners

Administrators identified their most successful marketing partners, providing lists with components that break down as follows:

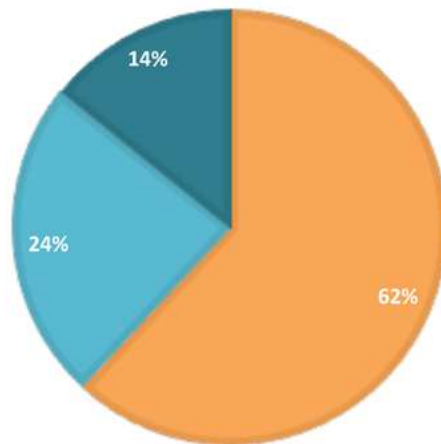
It makes sense that fully half of the most successful marketing partners identified by administrators would be immersed in the business community: local businesses, Chambers of Commerce, and CVTE Advisory Boards. They also have a broad array of additional collaborators. Notably missing, however, is any mention of state government.



Estimate (Excluding Salaries) of Annual Marketing Budget for Student Recruitment

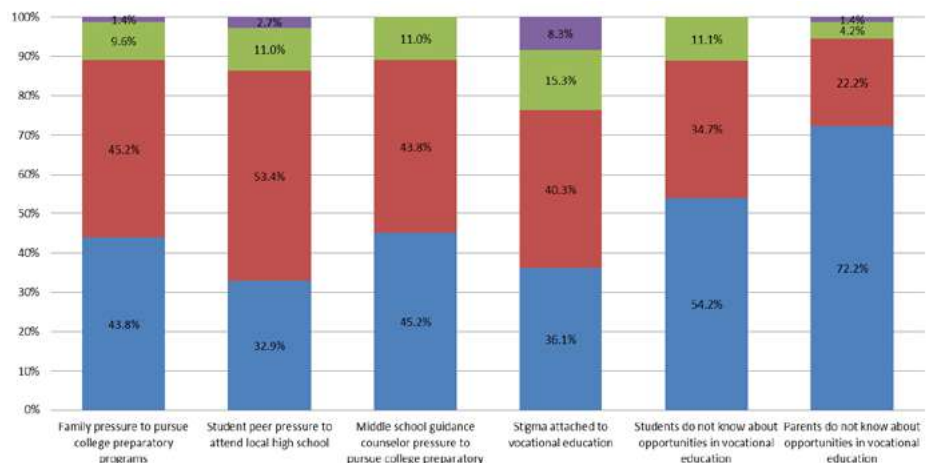
According to their administrators, most (79%) CVTE schools actively market their programs through both business and community groups but devote little funding to the effort. Apparently, 62% budget \$10,000 or less per year (minus salaries) to advertising, recruitment, and information sessions to attract potential students.

0-\$10,000 \$10,001-\$20,000 \$40,001-\$50,000



Importance of Students' Reasons for Not Choosing Vocational Education

In an effort to identify obstacles to their marketing strategies, we asked administrators how important they thought various factors were in influencing students' decisions not to apply to CVTE schools. A large preponderance of administrators view every single factor as "important" to "very important."



To this list of factors, administrators added “other” reasons they thought many students do not apply to CVTE schools:

- misguided regional district control
- lack of academic rigor
- student commute times
- lack of extracurricular activities
- cultural and socioeconomic bias toward college
- the myth that CVTE students cannot get into college.

Two respondents captured the thrust of these comments. As one administrator put it, “The stigma is huge. We are seen as a refuge for potential dropouts and academically weak students. People don’t realize the significant licensure opportunities, our quality academics, and the student activities we offer.”

Similarly, and more specifically, another observed, “Students are precluded from access to Vocational Education by their sending districts. If students and parents were better informed and provided additional access, more students would take advantage of vocational opportunities.”

Administrators were also asked to share their understanding of community perceptions about CVTE schools. Interestingly, only a few (22%) believe that the degree of stigma attached to CVTE varies across racial or ethnic groups in their communities. Among that small number, 93% claimed that whites tended to stigmatize CVTE, with only about half of African-Americans and Asians doing so. Hispanics were least observed to regard CVTE with any stigma. Slightly more administrators (29%) thought there were groups for whom CVTE held special appeal, with Hispanics reflecting a full 81% of that preference.

Summary

The administrators we surveyed confirmed previous studies claiming that the Commonwealth’s CVTE schools have large and growing waiting lists. More than half were unable to place 10% or more in their first choice of program. Two of the biggest obstacles to expansion concern funding: financial support for equipment, buildings, and staff, and regional schools’ authorization structure requiring all participating towns to sign off on all funding requests. There is also room for improving the state government’s involvement in program-related information sharing and marketing efforts. More vigorous and imaginative marketing efforts might help dispel some of the stigma associated with CVTE schooling, of which administrators complain bitterly.

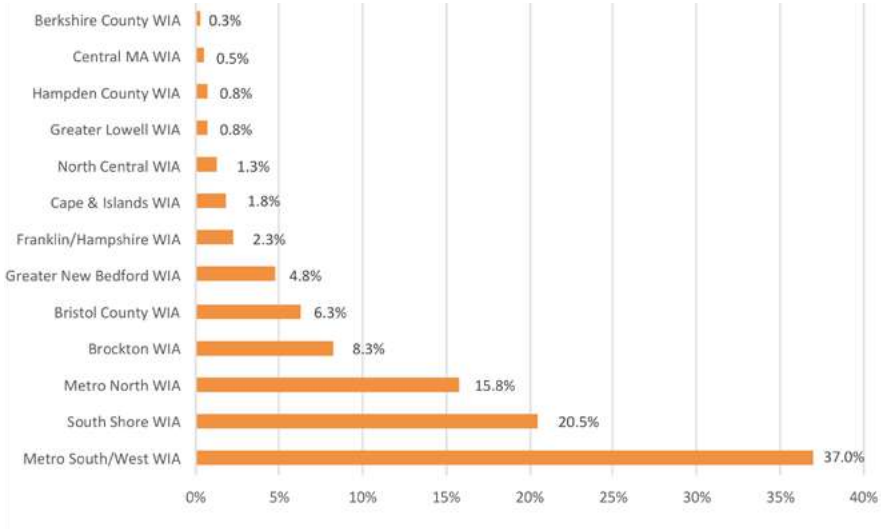
In brief, our CVTE schools are pressed beyond their limits to provide all interested students with admission to their schools and would probably discover even greater demand if they had more developed marketing programs with additional partners — local and statewide.

SECTION VI: PARENTS SURVEY

Regional Distribution of Respondent Parents Across Workforce Investment Areas

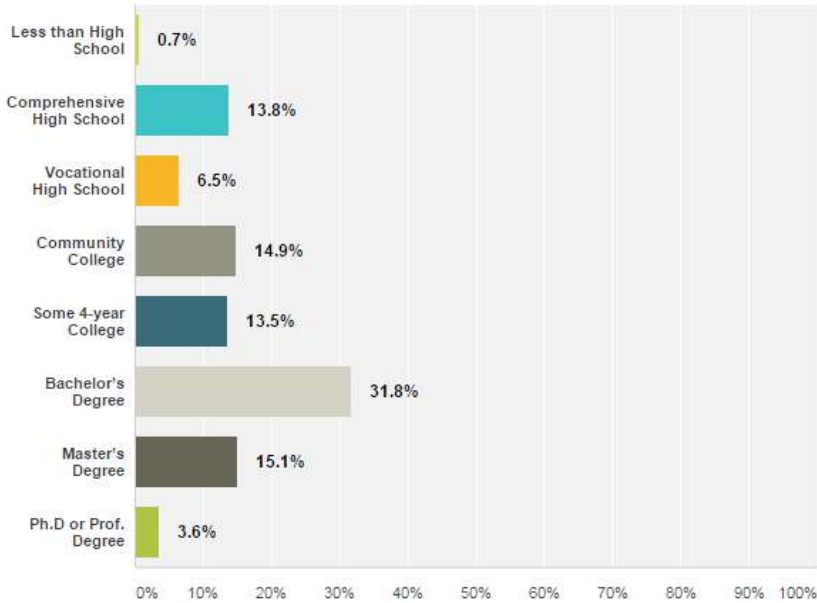
In all, 459 parents, concentrated almost exclusively in the eastern half of the Commonwealth, responded to our survey. Boston itself, however, is not represented at all. This absence reflects, in part, the fact that there is only one vocational technical school in Boston proper (Madison Park).

Mothers were much more likely to respond to our survey, as were whites. Among all respondents, 82% were female and 91% were white (white CVTE enrollment is 66%). They overwhelmingly fell within the 35-54 age demographic (82%).



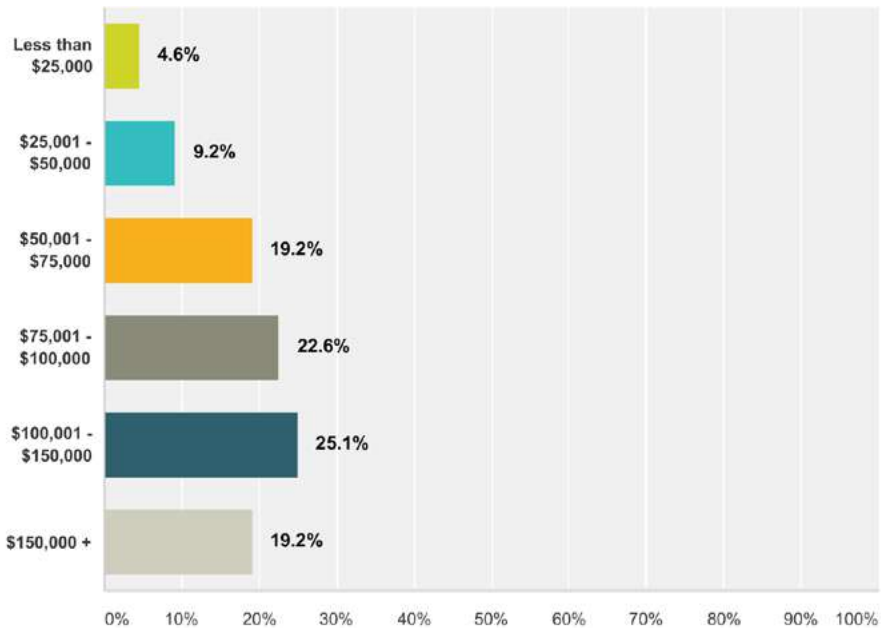
Parents' Highest Level of Formal Education

Survey respondents were also relatively advanced in their own educational backgrounds. Based on 2010 census data, the proportion of Massachusetts residents 25 or older with at least a four-year college degree is 39%, compared with 51% of our survey respondents. It is worth noting that the students who participated in our student survey report lower education level among their parents, which further suggests that those parents who took this survey are not fully representative of all CVTE parents.



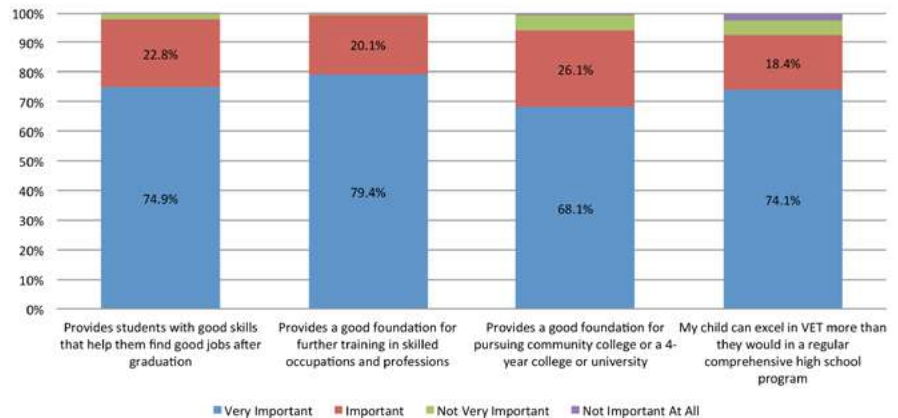
Parents' Annual Income

Moreover, as the following chart shows, our respondents' family income levels are higher than the state median of \$83,813 (1-yr ACS, 2013). In fact, 45% make over \$100,000 per year.



Reasons Why Parents Enroll Their Children in CVT

With more than average income and education, why do these parents choose to send their kids through CVTE schools or programs? What “value” do they see in such programming? Presented with four statements, the overwhelming number of respondents ranked all of them as “Very Important” or “Important.”

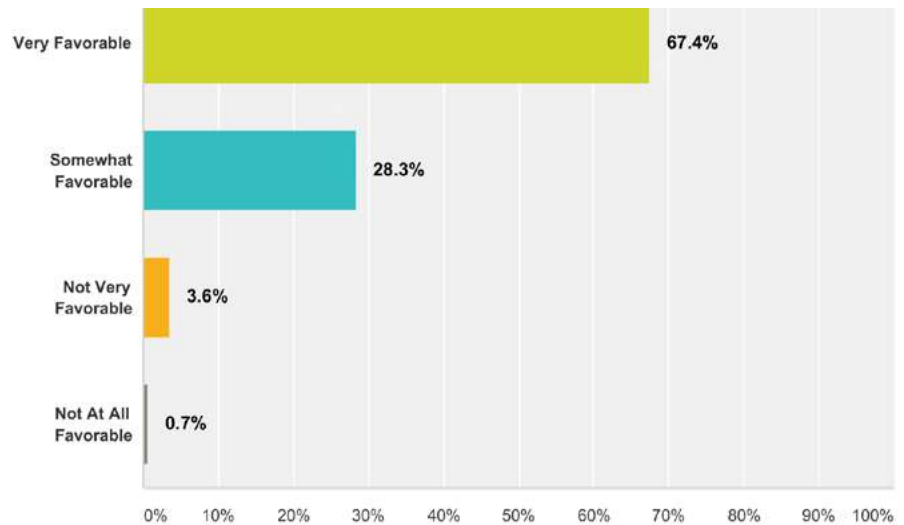


By and large, parents' survey responses to our predetermined “value” questions track closely with those of students. Given the chance to add their own reasons for valuing CVTE, parents registered four additional strengths and one weakness. A large number of parents stressed the importance of “hands-on learning,” inclusivity and diversity as an ethic and a reality, and the value of CVTE for nontraditional learners. Several also mentioned that scheduling “shop” and academics in alternating weeks reduced student “stress” and low self-esteem, and made learning more “fun.” Two respondents, however, registered concern about maintaining lower standards for underperforming

students. In the words of one, “I feel that the school needs better resources with helping children that are falling behind or have poor grades. They provide minimal help and do not believe help is needed for a child that has a grade of a C- or D. These are not the grades that are accepted by colleges so they should not be acceptable to the school either. The school should be pushing to get the children with these grades more help not accepting these grades as passing.”

Parents' Opinions of Children's Vocational School Programs

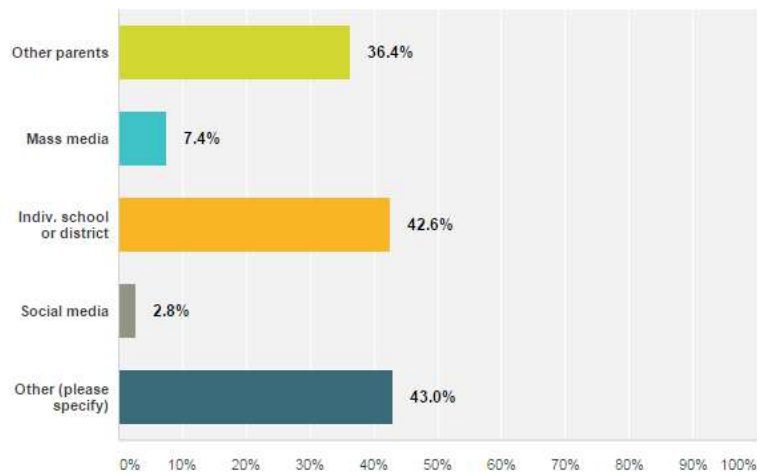
By a wide margin (96%), parents have a favorable opinion of the vocational school or program his or her kids are enrolled in, with 67% reporting a very favorable opinion.



How Parents Learned About Their Children's CVTE Schools or Programs

Parents report that they learn about CVTE primarily through other parents (36%) and from material sent by either the school district or an individual school (43%). An unusually high percentage of respondents (43%), however, identified “other” channels of information not provided on the survey. Among these, the overwhelming majority of respondents mentioned that either they or their family members were vocational school alumni—usually of the school that one or more of their children are attending. The second largest group of responses referred to middle school outreach, through either a specific guidance counselor or a formal information session.

What is striking here is that parents—presumably the primary targets of marketing efforts—receive virtually no information from the three groups administrators identify as their most successful marketing partners: local businesses, chambers of commerce, and CVTE advisory boards. Due at least partly to misunderstanding, administrators are clearly missing opportunities to better market their schools and programs through intermediaries that are already effectively promoting them.



Summary

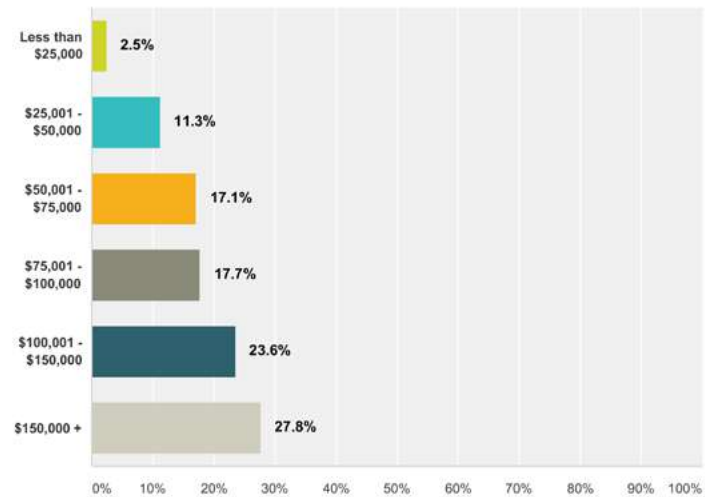
The parents who took our survey skewed more affluent, formally educated, and white than the average parental profile described by students who took the survey. The survey results may reflect these socio-economic characteristics. But one finding is remarkably clear: they hold an exceptionally favorable opinion of their children's CVTE programs. They also learn about local CVTE schools and programs through channels other than those administrators identify as their most successful marketing partners, notably other parents, family alumni, and middle school counselors.

SECTION VII: COMMUNITY SURVEY

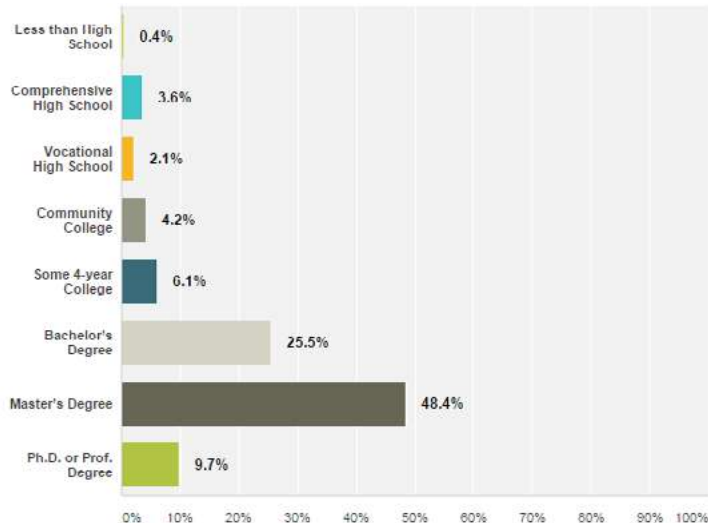
In addition to the parents survey, we surveyed adults who have no children in vocational schools. In all, there were 578 responses. Most respondents were female (69%) with a bachelor's degree or higher (84%) and a family income higher than the 2014 Massachusetts median of \$86,132.

A little more than half have annual family incomes of \$100,000 or more

Community Respondents' Annual Family Income

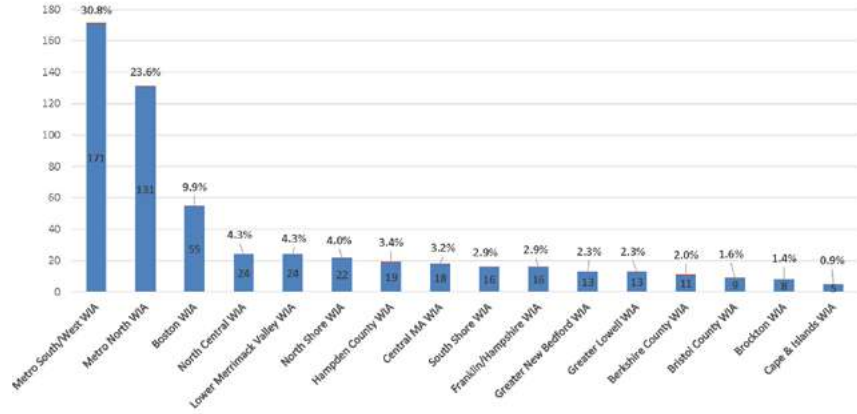


Community Respondents' Highest Levels of Formal Education



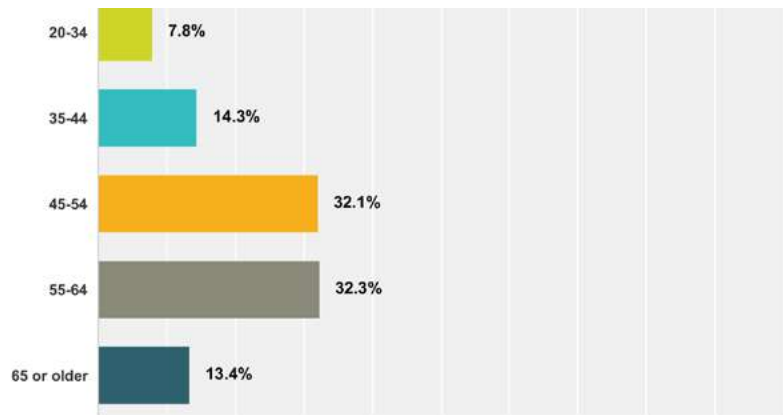
Regional Distribution of Community Respondents by WIA

The community members we surveyed are distributed across all 16 WIAs, with the greatest concentration (64.3%) in the Metro Boston WIAs of Metro South/West, Metro North, and Boston.



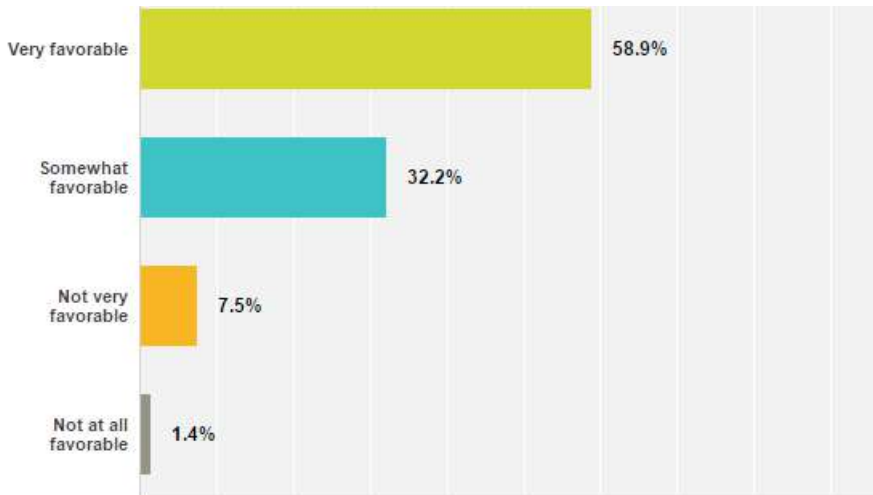
Age of Community Respondents

Respondents are also more evenly distributed by age, since the community sample was not confined to parents of high school students. In fact, only 31% of community respondents have children under 15, which accords with their older ages: 46% are 55 or older.



Community Respondents' Impressions of Nearby CVTE Schools and Programs

A large percentage of our community respondents (90%) are aware of CVTE programs for high school students in their communities or urban regions. To a large extent (91%) they have a favorable opinion of them, with nearly six out of ten (59%) having "very favorable" impressions.



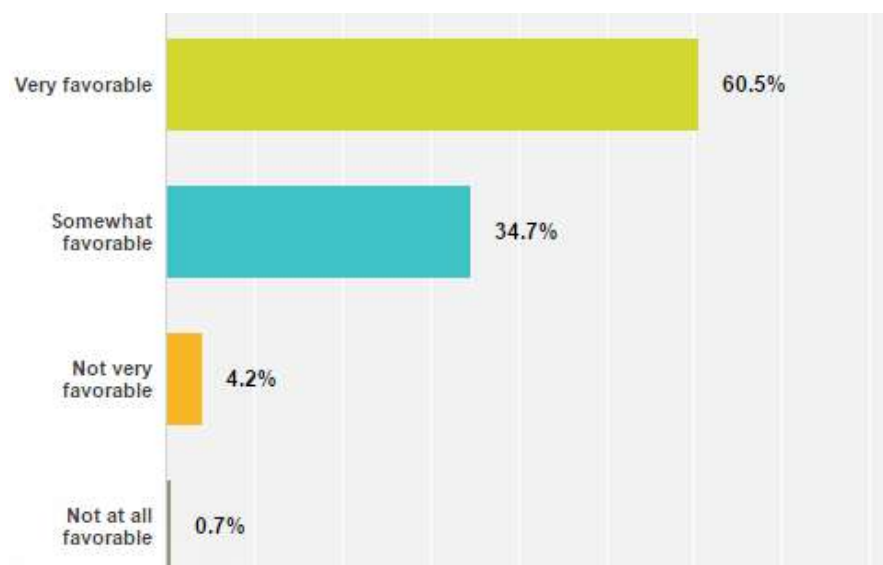
Disadvantages of CVTE Among Community Respondents Who View it Unfavorably

As for those who do not consider CVTE to be a good choice (a small minority of respondents), the largest number (48%) pointed to wanting their kids to pursue an academic education leading to a job requiring college. Another 23% did not think it provided a strong foundation for higher education, and still another 17% thought CVTE is appropriate only for students ill-prepared for regular academic work in a comprehensive high school. These numbers accord with administrators' sense of the bias shown toward CVTE among some portion of the community. A few cite lack of school proximity or absence of available slots, while some others do not think that CVTE provides either employable skills that lead to good jobs or a good foundation for further education. A few cite the "stigma" of CVTE while others point to matters that are school specific, such as the quality of the special ed program, poor communication, "behavior issues" among the other students, untargeted and underfunding, favoritism and lack of follow-through among counselors.

Reasons Why Community Respondents Held Unfavorable Views of CVTE	Number of Respondents
Does NOT provide students with skills that help them find good jobs at good pay after graduation	6
Does NOT provide a good foundation for further training in skilled occupations and professions	6
Does NOT provide a good foundation for pursuing community college or a 4-year college or university	21
Vocational Schools are for students who are not well-prepared to pursue a regular academic track in a comprehensive high school	16
I want my child or children to pursue an academic education leading to an occupation or profession requiring college	45
There is no vocational high school or vocational program close to where we live	4
I wanted my child or children to attend a vocational high school, but there were no slots available for them	3

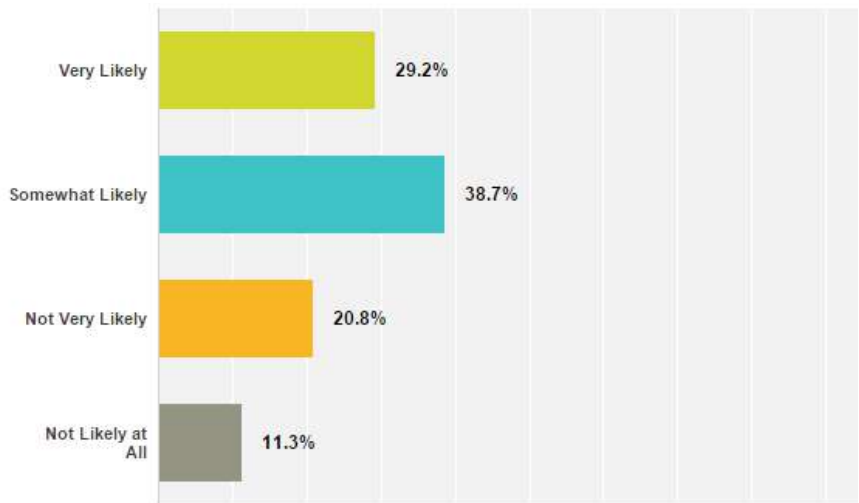
Community Respondents' Impressions of CVTE Programming with Which They Have First- or Secondhand Knowledge

Similar to the CVTE parents, four-fifths (81%) of our respondents knew someone who had attended a CVTE high school or program now or in the past, or had done so him- or herself. Of those, an even higher percentage, 95%, had a favorable opinion of the school or program; the same uptick is evident among those reporting "very favorable" impressions: 60.5%.



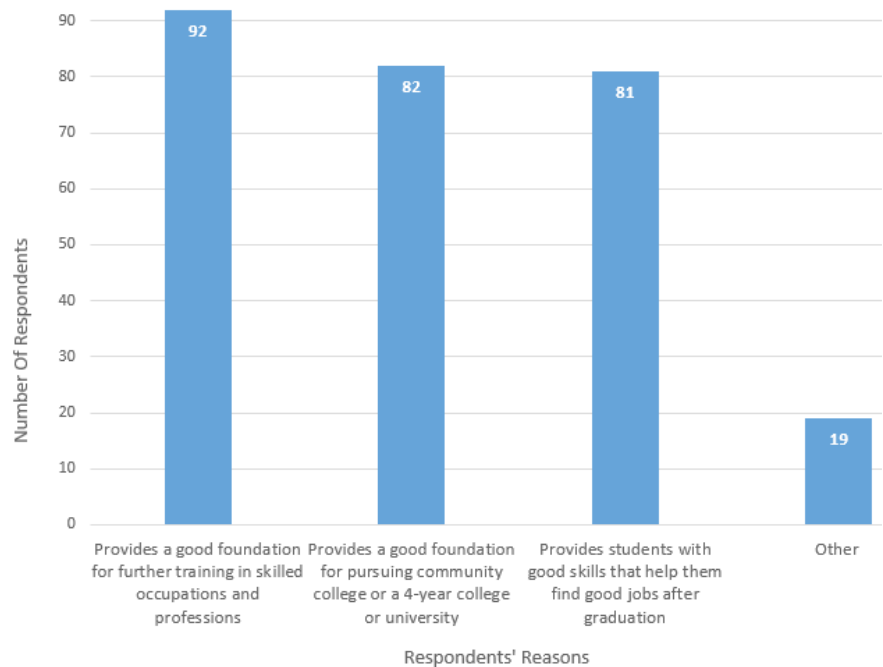
Likelihood the Community Respondents with Children Under 15 Would Consider Enrolling Them in a CVTE Program

Of those community members who have children under the age of 15, two-thirds suggested they would likely consider sending their child or children to a CVTE school or program. This result is quite striking, given the advanced socio-economic status of our sample.



Advantages of CVTE Among Community Respondents Who View It Favorably

Those who view CVTE favorably (and who were very much in the majority) thought its strongest benefit is that it provides a good foundation for further training in both skilled occupations and the professions (83%), followed by 73% who feel that CVTE furnishes good skills that lead to good jobs and provides a good foundation for pursuing higher education in either a community college or a four-year program. A large number of those posting "other" reasons pointed out that, aside from its value for hands-on learners and those who do well with a mix of approaches, CVTE gives students an opportunity to sample a variety of occupations and modes of learning before committing to further education or a full-time career.



Summary

Although respondents to the community survey have higher education and income levels and skew older than parent respondents, they are in close accord on the value of vocational education: high majorities of both view it very favorably. In fact, two-thirds of community members

with children under age 15 would be likely to enroll them in such a school or program, and less than 5% of our community sample view CVTE unfavorably. Once again, concerns about the stigma associated with CVTE is not fully supported by our survey results.

SECTION VIII: REPORT SUMMARY

Our six surveys of career/vocational technical education stakeholders are in striking harmony with one another, with only minor clashes of perception. On the whole, all are impressed by the quality of the Commonwealth's CVTE schools' and programs' curricula, rigor, and student achievement. As evidenced by current students' post—high school plans and alumni activities, they are turning out young adults who can successfully advance to four-year college or university, community college, or occupational positions in the workforce for which they have trained. Equipped with a range of skills and knowledge—both vocational and academic—they are well prepared for the kaleidoscopic 21st century labor market.

The surveyed employers, who were evenly distributed geographically and by firm size, provide the strongest foundation for this positive conclusion. More than two-thirds expect to add new employees over the next five years—almost a quarter by at least 11%. In strong numbers, surveyed employers prefer hiring CVTE graduates for both entry-level (75%) and higher-level (61%) jobs. So pleased are they with these schools and programs, that 90% of the employers surveyed see a need to increase the number of vocational school graduates and to provide them with more modern equipment to train their students. More than two-thirds (68%) have increased investment in on-the-job training; 55% are involved in some way with vocational schools and programs; and 75% of those not involved would consider becoming engaged in some capacity. These numbers suggest that employer commitment to the state's CVTE programming is significant and has the strong potential to run deeper.

Parents, current students, and alumni also report high levels of satisfaction with their schools' vocational programming. By a wide margin (96%), parents report a favorable opinion of their children's vocational school or program. Ninety-four percent of students say that their programs are meeting their expectations—59% very much so—while 96% of alumni's expectations were met, 69% very much so. Still, there is room for improvement. Among the 31% of current students who are only somewhat, not very, or not at all satisfied, nearly four in ten believe their schools need better or more modern facilities and equipment, and more than 30% cite poor teacher quality.

A sure sign of the success of the Commonwealth's CVTE schools and programs lies in their inability to meet demand. Overall, enjoyment of and interest in a particular trade or occupation and the skills associated with them are by far the chief motives for choosing CVTE among both current students and alumni, followed by their schools' strong reputation, proximity to home, and levels of safety in comparison with their local high schools. For these reasons and others, some programs are overenrolled: 16% of current students did not get into their preferred program, and vocational school waiting lists remain large in many regions of the state.

Perceptions of the CVTE system's strengths and potential among employers, parents, students, and recent graduates are generally in accord with one of the key grievances of vocational school administrators. A large majority (82%) report that their schools face major obstacles to expansion. The largest obstacles, they say, lie in funding for buildings (85%), equipment (64%), and personnel (60%). Part of the trouble is attributed to regional CVTE schools' funding structure, which by state law requires that each participating town sign off on all funding approvals.

Administrators maintain that, even though they cannot meet demand under current funding conditions, there is even more demand that remains untapped. To reach more potential students and their parents, a better marketing strategy may be required. It is unclear, however, what that might be. Half of surveyed administrators report that their most successful marketing partners are immersed in the business community: local businesses, chambers of commerce, and CVTE advisory boards. Yet it is striking that parents say they receive virtually no information from these three groups. Instead they learn about CVTE programming primarily through other parents (36%) or family alumni, and from material sent by either the school district or an individual school (43%), often through middle school outreach.

The survey of community members reveals a 95% favorable rate among those with first- or secondhand knowledge of CVTE programs, which suggests that the impression of stigma may be abating. Another survey, this one of regular high school students, parents, and teachers, might be warranted to better settle this question.

If questions about effective marketing of the Commonwealth's CVTE schools and programs, and the extent of the stigma they must contend with remain not entirely answered by this study, two areas are clearly in need of improvement. Surveyed employers report that, although the majority prefer hiring CVTE graduates for both entry-level and higher-level positions, nearly all would like to see vocational schools better train their students in the professional "soft skills" of workplace behavior, etiquette, and teamwork. Relatedly, although CVTE graduates generally meet employer expectations on basic competencies, the one area where they fall short—by about 15%—is in speaking competency. The second area where employers would like to see improvement is in training for specific technical skills (excluding basic computer competency). About a third (33%) of employer respondents report that CVTE programming is doing only a fair to poor job of preparing students for occupational licensing or certification. Presumably, these small but not insignificant findings reflect employers' need to meet higher and ever-rising technical employment standards.

Such expectations can only be met with more funding for modernized equipment and facilities, and possibly for more teacher training, whether it comes from the towns served by regional CVTE schools, the state, employers themselves, or some combination of all three. One thing is clear, though: satisfaction levels with CVTE are very high among all the surveyed stakeholders, as is demand for its mixed college-prep and occupational/trades approach to secondary education. So successful is the Commonwealth's CVTE programming that, without further support, young adults planning to enter the occupations and trades for which it was originally intended could be squeezed out by the college- and professions-bound. And that would be an ironic, unfair, and unsatisfying turn of events across the board.

ENDNOTES

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3. See Peter Enrich, et al., *Manufacturing Success: Improved Access to Vocational Education in Massachusetts*, Northeastern University School of Law (March 26, 2014), pp. 11-12. Massachusetts Association of Vocational Administrators (MAVA) Survey of 2015 CVTE applicants and wait lists. The wait list includes all students who have a completed application on file, and meet the school's minimum requirements and are therefore eligible for admissions on October 2, 2015. The survey was completed by 54 high schools, including 29 vocational technical schools and 25 comprehensive schools with vocational programs.
4. Tom Birmingham, "Your View: Pioneer Institute: Voc-Tech Schools Provide Models for Success," *South Coast Today*, July 1, 2015. <http://www.southcoasttoday.com/article/20150701/OPINION/150709959>; Jennifer Fenn Lefferts, "Selling 16 Towns on a Fix for Minuteman High," *Boston Globe*, April 30, 2015. <https://www.bostonglobe.com/metro/regionals/west/2015/04/30/selling-towns-fix-for-minuteman-high/gSc-Sh9e5USIEjmHDWqs6hO/story.html>.
5. DESE, Information Services – Statistical Reports: Dropout Rates in Massachusetts Public Schools, 2013-14, <http://www.doe.mass.edu/infoservices/reports/dropout/2013-2014/>; DESE, School/District Profiles: 2012-13 Graduates Attending Institutions of Higher Education, http://profiles.doe.mass.edu/state_report/gradsattendingcollege.aspx. Note that, according to DESE data, 68% of Class of 2012 regional CVTE school graduates planned to attend post-secondary school, compared with the 56.7% who actually did. It would be worthwhile to learn why more than 10% of these CVTE seniors changed their plans. <http://www.doe.mass.edu/infoservices/reports/hsg/data.html?yr=12>.
6. Alison L. Fraser and William Donovan, *Hands-On Achievement: Why Massachusetts Vocational Technical Schools Have Low Dropout Rates*, Pioneer Institute White Paper No. 96 (January 2013), p. 5. ([http://pioneerinstitute.org/education/low-drop-out-rates-at-voc-techs/](http://pioneerinstitute.org/education/low-dropout-rates-at-voc-techs/)).
7. See Matthew B. Crawford, *Shop Class as Soulcraft: An Inquiry into the Value of Work*. New York: Penguin, 2010; Noelle Swan, "The 'Maker Movement' Creates DIY Revolution," *Christian Science Monitor*, July 6, 2014. <http://www.csmonitor.com/Technology/2014/0706The-maker-movement-creates-D.I.Y.-revolution>.
8. Quoted in Megan Woolhouse, "Schools' Wait Lists called a Drag on the Economy," *Boston Globe*, September 15, 2014. <https://www.bostonglobe.com/business/2014/09/14/with-companies-clamoring-for-skilled-workers-vocational-schools-unable-educate-enough/X20u4D2LEnbU8AFI59tKqN/story.html>.
9. Alan Clayton-Matthews, Barry Bluestone, and Nancy Lee, *Meeting the Commonwealth's Workforce Needs: Occupational Projections and Vocational Education*, prepared for the Massachusetts School Building Authority by the Kitty and Michael Dukakis Center for Urban and Regional Policy, October 2015.
10. See Barry Bluestone, Anna Gartsman, Don Walsh, Russ Eckel, and James Huessy, *Staying Power II: A Report Card on Manufacturing in Massachusetts 2012*, The Boston Foundation (September 2012).
11. David Scharfenberg, "Is the Skills Gap Real?" *Boston Globe*, August 2, 2015. <https://www.bostonglobe.com/ideas/2015/08/01/skills-gap-real/ZKiocRvwz24jdnY1DaoNK/story.html>. See also James Bessen, "Employers Aren't Just Whining: The 'Skill Gaps' is Real," *Harvard Business Review*, August 25, 2014. <https://hbr.org/2014/08/employers-arent-just-whining-the-skills-gap-is-real/>.

Employers Survey

1. In what Massachusetts city or town is your company located?
2. Which one of the following best represents your industry?
 - Agriculture, Forestry, Fishing & Hunting
 - Construction
 - Manufacturing
 - Utilities
 - Wholesale Trade
 - Retail Trade
 - Transportation and Warehousing
 - Information
 - Finance and Insurance
 - Real Estate and Rental and Leasing
 - Professional and Technical Services
 - Management of Companies and Enterprises
 - Administrative and Waste Services
 - Educational Services
 - Health Care and Social Assistance
 - Arts, Entertainment, and Recreation
 - Accommodation and Food Services
 - Other Services, Ex. Public Admin
 - Public Administration
3. What is the approximate number of employees in your firm?
 - 1-10
 - 11-25
 - 26-50
 - 51-100
 - 101-250
 - 250-1000
 - 1000+
4. Over the next 5 years, what do you expect will happen to the level of employment in your firm?
 - Decrease by 25% or more
 - Decrease by 11-24%
 - Decrease by 0-10%
 - Remain the same as today
 - Increase by 0-10%
 - Increase by 11-24%
 - Increase by 25% or more
5. Reading Comprehension Competency
 - 1 (Very Low Level)
 - 2
 - 3
 - 4
 - 5 (Very High Level)
6. Math Comprehension Competency
 - 1 (Very Low Level)
 - 2
 - 3
 - 4
 - 5 (Very High Level)
7. Writing Competency
 - 1 (Very Low Level)
 - 2
 - 3
 - 4
 - 5 (Very High Level)
8. Speaking Competency
 - 1 (Very Low Level)
 - 2
 - 3
 - 4
 - 5 (Very High Level)
9. Computer Competency
 - 1 (Very Low Level)
 - 2
 - 3
 - 4
 - 5 (Very High Level)

10. “Soft Skills” (e.g. workplace behavior, attitudes, etiquette, teamwork)
- 1 (Very Low Level)
 - 2
 - 3
 - 4
 - 5 (Very High Level)
11. Over the past 5 years, have you hired vocational high school graduates?
- Yes
 - No
12. How many vocational high school graduates have you hired over the past 5 years?
- 1-5
 - 6-10
 - 11-20
 - 21-50
 - 51+
13. Reading Comprehension Competency
- 1 (Low Level)
 - 2
 - 3
 - 4
 - 5 (High Level)
 - Don't Know
14. Math Comprehension Competency
- 1 (Low Level)
 - 2
 - 3
 - 4
 - 5 (High Level)
 - Don't Know
15. Writing Competency
- 1 (Low Level)
 - 2
 - 3
 - 4
 - 5 (High Level)
 - Don't Know
16. Speaking Competency
- 1 (Low Level)
 - 2
 - 3
 - 4
 - 5 (High Level)
 - Don't Know
17. Computer Competency
- 1 (Low Level)
 - 2
 - 3
 - 4
 - 5 (High Level)
 - Don't Know
18. “Soft Skills” (e.g. workplace behavior, attitudes, etiquette, teamwork)
- 1 (Low Level)
 - 2
 - 3
 - 4
 - 5 (High Level)
 - Don't Know
19. On average, how well trained in the specific technical skills you need are the vocational high school graduates you have hired?
- Very Well Trained
 - Somewhat Well Trained
 - Not Very Well Trained
 - Not at All Well Trained
20. For entry-level positions in your firm, how strong is your preference for graduates from vocational schools and/or vocational programs in comprehensive high schools compared with other high school graduates?
- Very Strong
 - Somewhat Strong
 - A Little
 - Not At All
21. For higher-level positions in your firm, how strong is your preference for graduates from vocational schools and/or vocational programs in comprehensive high schools compared with other high school graduates?
- Very Strong
 - Somewhat Strong
 - A Little
 - Not At All

22. How sufficient is the number of competent vocational school graduates to meet your workforce needs?
- Very Sufficient
 - Sufficient
 - Not Very Sufficient
 - Not At All Sufficient
23. How strong would you rate the current ability of your local vocational school to provide the necessary training for occupational licensing or certification?
- Excellent
 - Very Good
 - Good
 - Fair
 - Poor
 - Do Not Know
24. Has your company increased or reduced its own investment in training over the past 5 years?
- Increased A Lot
 - Increased
 - No Change
 - Decreased
 - Decreased A Lot
25. Has your company relied more or less on vocational school training for new employees over the past 5 years?
- Increased a lot
 - Increased
 - No Change
 - Decreased
 - Decreased A Lot
26. Is your company involved with vocational schools in any way?
- Yes
 - No
 - Does Your Company...
27. Serve on an advisory committee for your local vocational school?
- Yes
 - No
28. Offer paid internships or paid co-op positions for vocational education students?
- Yes
 - No
29. Offer unpaid internships or co-op positions for vocational education students?
- Yes
 - No
30. Offer internships for vocational school teachers?
- Yes
 - No
31. Sponsor open houses at your firm for students and their parents?
- Yes
 - No
32. Sponsor an educational program at your place of business that allows vocational students to operate in-house equipment under competent supervision.
- Yes
 - No
33. Provide direct funding to a vocational school?
- Yes
 - No
34. Partner with a vocational school for the development of customized training?
- Yes
 - No
35. Help market and promote vocational education?
- Yes
 - No
36. If your company is not currently involved with vocational high schools, would you consider becoming involved?
- Yes
 - No
- In what ways would your company consider becoming involved?**
37. Serve on an advisory committee for your local vocational school?
- Yes
 - No
38. Offer paid internships or paid co-op positions for vocational education students?
- Yes
 - No

39. Offer unpaid internships or coop positions for vocational education students?
- Yes
 - No
40. Offer internships for vocational school teachers?
- Yes
 - No
41. Sponsor open houses at your firm for vocational education students and their parents?
- Yes
 - No
42. Provide equipment to a vocational school?
- Yes
 - No
43. Provide direct funding to a vocational school?
- Yes
 - No
44. Partner with a vocational school for the development of customized training?
- Yes
 - No
45. Help market and promote vocational education?
- Yes
 - No
46. Are there any particularly outstanding vocational high school programs with which you are familiar?
- Yes
 - No
47. Which programs at which schools?
48. Is it important to your business to improve vocational education in your region?
- Yes
 - No

In what ways is it important to your business to improve vocational education in your region?

49. Larger number of vocational high school graduates
- Very Important
 - Somewhat Important
 - Not Very Important
 - Not Important At All

50. More modern equipment in school
- Very Important
 - Somewhat Important
 - Not Very Important
 - Not Important At All
51. Higher level competency training
- Very Important
 - Somewhat Important
 - Not Very Important
 - Not Important At All
52. Additional training in “soft skills” (e.g. workplace behavior, attitudes, etiquette, teamwork)
- Very Important
 - Somewhat Important
 - Not Very Important
 - Not Important At All

Students Survey

1. In what town or city do you live?
2. What high school do you attend?
3. What year are you in?
 - Freshman
 - Sophomore
 - Junior
 - Senior
 - Post-Graduate

Here are some reasons why students attend a vocational high school or participate in a vocational program within a comprehensive high school. How strong is each of these reasons for you?

4. My parents wanted me to
 - Very Strong
 - Moderately Strong
 - Not Very Strong
 - Not At All Strong
5. My friends were planning to go here and I wanted to stay with them
 - Very Strong
 - Moderately Strong
 - Not Very Strong
 - Not At All Strong
6. I am interested in learning a trade or specific occupation
 - Very Strong
 - Moderately Strong
 - Not Very Strong
 - Not At All Strong
7. I am not interested in pursuing ordinary academic studies
 - Very Strong
 - Moderately Strong
 - Not Very Strong
 - Not At All Strong
8. The reputation of the school is very good
 - Very Strong
 - Moderately Strong
 - Not Very Strong
 - Not At All Strong

9. The school has excellent modern facilities/equipment
 - Very Strong
 - Moderately Strong
 - Not Very Strong
 - Not At All Strong

10. The school is close to where I live
 - Very Strong
 - Moderately Strong
 - Not Very Strong
 - Not At All Strong

11. I feel safer at the vocational school than I do at the local high school
 - Very Strong
 - Moderately Strong
 - Not Very Strong
 - Not At All Strong

12. Other

13. What vocational program are you in or considering?

Why did you select this program?

14. I enjoy the skills required in this trade or occupation
 - Strongly Agree
 - Agree
 - Disagree
 - Strongly Disagree

15. I think I will have good job prospects in this trade or occupation
 - Strongly Agree
 - Agree
 - Disagree
 - Strongly Disagree

16. I think I have skills that are well-suited to this trade or occupation
 - Strongly Agree
 - Agree
 - Disagree
 - Strongly Disagree

17. Jobs in this field pay well
 - Strongly Agree
 - Agree

18. I can be my own boss in this trade or occupation

- Strongly Agree
- Agree
- Disagree
- Strongly Disagree

19. I couldn't get into my first choice

- Strongly Agree
- Agree
- Disagree
- Strongly Disagree

20. Other

21. How much is your vocational program meeting your expectations?

- Very Much
- Somewhat
- Not Very Much
- Not At All

If your program fails to meet your expectations in some ways, what do you find to be the problem?

22. Inadequate facilities/equipment

- Strongly Agree
- Agree
- Disagree
- Strongly Disagree

23. Poor teacher quality

- Strongly Agree
- Agree
- Disagree
- Strongly Disagree

24. Program too easy

- Strongly Agree
- Agree
- Disagree
- Strongly Disagree

25. Program too difficult

- Strongly Agree
- Agree
- Disagree
- Strongly Disagree

26. Difficulty making friends

- Strongly Agree
- Agree
- Disagree
- Strongly Disagree

27. Preferred program not available

- Strongly Agree
- Agree
- Disagree
- Strongly Disagree

28. Other

29. How much do you believe that completing a college education is necessary for a young person to get a good job in today's economy?

- Very Important
- Important
- Not Very Important
- Not Important At All

30. Which most closely matches your plans after graduation?

- Full-time 4-year College
- Full-time 2-year College
- Part-time 4-year College
- Part-time 2-year College
- Military Service
- Employment in my choice of vocation
- Other

31. How well is your school preparing you to pursue college if you wish to?

- Very Well
- Somewhat Well
- Not Very Well
- Not At All Well

32. What is your gender?

- Male
- Female

33. What is your race/ethnicity?

- White
- African-American or Black
- Hispanic/Latino (Any Race)
- Asian
- American Indian or Alaska Native
- Native Hawaiian or Other Pacific Islander

34. What was your father's highest level of education?
- Less than High School
 - High School Graduate – Comprehensive High School
 - High School Graduate – Vocational High School
 - Community College
 - Some 4-year College
 - Bachelor's Degree – 4-Year College
 - Master's Degree – Graduate Education
 - Ph.D. or Professional Degree (e.g. M.D., Law Degree)
 - Don't Know
35. What was your mother's highest level of education?
- Less than High School
 - High School Graduate – Comprehensive High School
 - High School Graduate – Vocational High School
 - Community College
 - Some 4-year College
 - Bachelor's Degree – 4-Year College
 - Master's Degree – Graduate Education
 - Ph.D. or Professional Degree (e.g. MD, Law Degree)
 - Don't Know
36. What is or was your father's primary occupation?
37. What is or was your mother's primary occupation?

Alumni Survey

1. What high school did you attend?
2. In what year did you graduate?
3. What are you doing now? (Mark all that apply)
 - Pursuing an apprenticeship or further occupational training in the field I studied in high school
 - Pursuing training in a different field from the one I studied in high school
 - Attending community college
 - Attending a 4-year college or university
 - Working full-time in the occupation or profession I studied in high school
 - Working part-time in the occupation or profession I studied in high school
 - Working full- or part-time in a field other than the one I studied in high school
 - Full-time homemaking
 - In the military
 - Unemployed

Here are some reasons why students attend a vocational high school or participate in a vocational program within a comprehensive high school. How strong was each of these reasons for you?

4. My parents wanted me to
 - Very Strong
 - Moderately Strong
 - Not Very Strong
 - Not At All Strong
5. My friends were planning to go there and I wanted to stay with them
 - Very Strong
 - Moderately Strong
 - Not Very Strong
 - Not At All Strong
6. I was interested in learning a trade or specific occupation
 - Very Strong
 - Moderately Strong
 - Not Very Strong
 - Not At All Strong

7. I was not interested in pursuing ordinary academic studies

- Very Strong
- Moderately Strong
- Not Very Strong
- Not At All Strong

8. The reputation of the school was very good

- Very Strong
- Moderately Strong
- Not Very Strong
- Not At All Strong

9. The school has excellent modern facilities/equipment

- Very Strong
- Moderately Strong
- Not Very Strong
- Not At All Strong

10. The school was close to home

- Very Strong
- Moderately Strong
- Not Very Strong
- Not At All Strong

11. I felt safer at the vocational school than I did at the local high school

- Very Strong
- Moderately Strong
- Not Very Strong
- Not At All Strong

12. Other

13. What specific vocational program did you graduate from?

Why did you select this program?

14. I enjoy the skills required in this trade or occupation

- Strongly Agree
- Agree
- Disagree
- Strongly Disagree

15. I think I will have good job prospects in this trade or occupation

- Strongly Agree
- Agree
- Disagree
- Strongly Disagree

16. I think I have skills that are well-suited to this trade or occupation

- Strongly Agree
- Agree
- Disagree
- Strongly Disagree

17. Jobs in this field pay well

- Strongly Agree
- Agree
- Disagree
- Strongly Disagree

18. I can be my own boss in this trade or occupation

- Strongly Agree
- Agree
- Disagree
- Strongly Disagree

19. I couldn't get into my first choice

- Strongly Agree
- Agree
- Disagree
- Strongly Disagree

20. Other

21. How much has your vocational program met your expectations?

- Very Much
- Somewhat
- Not Very Much
- Not At All

If your program failed to meet your expectations in some ways, what do you think was the problem?

22. Inadequate facilities/equipment

- Strongly Agree
- Agree
- Disagree
- Strongly Disagree

23. Poor teacher quality

- Strongly Agree
- Agree
- Disagree
- Strongly Disagree

24. Program too easy
- Strongly Agree
 - Agree
 - Disagree
 - Strongly Disagree
25. Program too difficult
- Strongly Agree
 - Agree
 - Disagree
 - Strongly Disagree
26. Difficulty making friends
- Strongly Agree
 - Agree
 - Disagree
 - Strongly Disagree
27. Preferred program not available
- Strongly Agree
 - Agree
 - Disagree
 - Strongly Disagree
28. Other
29. How much do you believe that completing a college education is necessary for a young person to get a good job in today's economy?
- Very Important
 - Somewhat Important
 - Not Very Important
 - Not Important At All
30. What is your gender?
- Male
 - Female
31. What is your race/ethnicity?
- White
 - African-American or Black
 - Hispanic/Latino (Any Race)
 - Asian
 - American Indian or Alaska Native
 - Native Hawaiian or Other Pacific Islander
32. What was your father's highest level of education?
- Less than High School
 - High School Graduate – Comprehensive High School
 - High School Graduate – Vocational High School
 - Community College
 - Some 4-year College
 - Bachelor's Degree – 4-Year College
 - Master's Degree – Graduate Education
 - Ph.D. or Professional Degree (e.g. M.D., Law Degree)
 - Don't know
33. What was your mother's highest level of education?
- Less than High School
 - High School Graduate – Comprehensive High School
 - High School Graduate – Vocational High School
 - Community College
 - Some 4-year College
 - Bachelor's Degree – 4 Year College
 - Master's Degree – Graduate Education
 - Ph.D. or Professional Degree (e.g. MD, Law Degree)
 - Don't know
34. What is or was your father's primary occupation?
35. What is or was your mother's primary occupation?

School Administrators Survey

1. Name of School
2. What three programs in your school are in highest demand by students today?
3. What three programs in your school were in highest demand by students 10 years ago (2005)?
4. What three programs do you believe will be in highest demand by students 5 years from now (2020)?
5. Which of your school's programs is currently over-subscribed?
6. What percentage of your students are enrolled in their first-choice vocational program?
7. As of October 1, 2014, how many 9th grade applicants remained on your school's waiting list?
8. Assuming current funding levels into the future, which current programs would you want to expand over the next 5 years?
9. Assuming current funding levels into the future, which new programs would you consider introducing over the next 5 years?
10. Assuming current funding levels into the future, which current programs would you consider contracting over the next 5 years in order to expand or introduce others?
11. Assuming increased funding levels into the future, which current programs would you want to expand over the next 5 years?
12. Assuming increased funding levels into the future, which new programs would you consider introducing over the next 5 years?
13. Assuming increased funding levels into the future, which current programs would you consider contracting over the next 5 years in order to expand or introduce others?
14. Family pressure to pursue college preparatory programs
 - Very Important
 - Important
 - Not Very Important
 - Not At All Important
15. Student peer pressure to attend local high school
 - Very Important
 - Important
 - Not Very Important
 - Not At All Important
16. Middle school guidance counselor pressure to pursue college preparatory programs
 - Very Important
 - Important
 - Not Very Important
 - Not At All Important
17. Stigma attached to vocational education
 - Very Important
 - Important
 - Not Very Important
 - Not At All Important
18. Students do not know about opportunities in vocational education
 - Very Important
 - Important
 - Not Very Important
 - Not At All Important
19. Parents do not know about opportunities in vocational education
 - Very Important
 - Important
 - Not Very Important
 - Not At All Important
20. Other reasons (please list)
21. Are there any racial or ethnic groups in your community for whom you believe a stigma of vocational education is especially prevalent?
 - Yes
 - No
22. Which groups?
 - White
 - African-American/Black
 - Hispanic
 - Asian
 - Other (please specify)

How important is each of the following factors in why many students do not apply to vocational schools?

23. Are there any racial or ethnic groups in your community for whom you believe vocational education is especially attractive?
- Yes
 - No
24. Which groups?
- White
 - African-American/Black
 - Hispanic
 - Asian
 - Other (please specify)
25. Are there any obstacles to expansion of your school?
- Yes
 - No
 - Please rate the following obstacles
26. Funding for equipment
- Major Obstacle
 - Minor Obstacle
 - Not An Obstacle
27. Funding for buildings
- Major Obstacle
 - Minor Obstacle
 - Not An Obstacle
28. Funding for personnel/staff
- Major Obstacle
 - Minor Obstacle
 - Not An Obstacle
29. Current faculty skills and expertise
- Major Obstacle
 - Minor Obstacle
 - Not An Obstacle
30. Union contracts
- Major Obstacle
 - Minor Obstacle
 - Not An Obstacle
31. School committee
- Major Obstacle
 - Minor Obstacle
 - Not An Obstacle
32. State Department of Elementary and Secondary Education (DESE)
- Major Obstacle
 - Minor Obstacle
 - Not An Obstacle
33. Other
34. Do you participate in a partnership with a community college where your students get formal community college credit?
- Yes
 - No
35. Approximately what percentage of your students do you believe benefit from this partnership?
- 1-5%
 - 6-10%
 - 11-19%
 - 20%+
 - Do Not Know
36. Do you participate in dual enrollment programs with a community college?
- Yes
 - No
37. Approximately what percentage of your students are enrolled in dual enrollment programs?
- 1-5%
 - 6-10%
 - 11-19%
 - 20%+
 - Do Not Know
38. Excluding salaries, what do you estimate is your average annual expenditure for advertising, recruitment, and information sessions to market your school to potential students?
39. Are you engaged with business or community groups to help market your school?
- Yes
 - No
40. Please list which groups you think are your most successful marketing partners.
41. How helpful is your local or regional Workforce Investment Board (WIB) in sharing labor market data useful for guiding program development in your school?
- A Lot
 - Somewhat
 - Not Very Much
 - Not At All

42. How much do local employer groups share workforce information useful for guiding program development in your school?

- A Lot
- Somewhat
- Not Very Much
- Not At All

43. How much does the Massachusetts Department of Labor share workforce information useful for guiding program development in your school?

- A Lot
- Somewhat
- Not Very Much
- Not At All

Parents Survey

1. In what town or city do you currently reside?
2. How did you learn about the educational alternatives and resources in your community, including the vocational high school or vocational programs in the comprehensive high school, where your child is enrolled or was enrolled? (Check all that apply)
 - From other parents
 - Newspapers/Radio/Television
 - Material sent to you by the School District or by the individual school
 - Social Media (e.g. Facebook/Twitter)
 - Other (please specify)

How important are the following reasons for sending your child or children to a vocational high school or vocational program?

3. The school or vocational program provides students with good skills that help them find good jobs after graduation
 - Very Important
 - Important
 - Not Very Important
 - Not Important At All
4. The school or vocational program provides a good foundation for further training in skilled occupations and professions
 - Very Important
 - Important
 - Not Very Important
 - Not Important At All
5. The school or vocational program provides a good foundation for pursuing community college or a 4-year college or university
 - Very Important
 - Important
 - Not Very Important
 - Not Important At All
6. My child can excel in a vocational high school or vocational program more than they would in a regular comprehensive high school program
 - Very Important
 - Important
 - Not Very Important

- Not Important At All

7. Other

8. What is your opinion of the quality of the education your child is receiving or has received in his or her vocational high school or vocational program in a comprehensive high school?

- Very Favorable
- Somewhat Favorable
- Not Very Favorable
- Not At All Favorable

9. Has your child (or children) pursued a particular occupational program in his or her vocational high school or comprehensive high school?

- Yes
- No

10. Which particular occupational program(s)?

11. How old are you?

- 20-34
- 35-44
- 45-54
- 55-64
- 65 or older

12. What is your highest level of education?

- Less than High School
- High School Graduate – Comprehensive High School
- High School Graduate – Vocational High School
- Community College
- Some 4-year College
- Bachelor's Degree – 4-Year College
- Master's Degree – Graduate Education
- Ph.D. or Professional Degree (e.g. M.D., Law Degree)

13. What is your gender?

- Male
- Female

14. What is your race/ethnicity?

- White
- African-American or Black
- Hispanic/Latino (Any Race)
- Asian
- American Indian or Alaska Native
- Native Hawaiian or Other Pacific Islander

15. What is your annual family income?

- Less than \$25,000
- \$25,001 - \$50,000
- \$50,001 - \$75,000
- \$75,001 - \$100,000
- \$100,001 - \$150,000
- \$150,000 +

Community Survey

1. In what town or city do you currently reside?
2. Are you aware of any vocational/technical programs for high school students in your community or region?
 - Yes
 - No
3. What is your opinion of these programs?
 - Very favorable
 - Somewhat favorable
 - Not very favorable
 - Not at all favorable
4. How do you learn about the educational alternatives and resources in your community? (Check all that apply)
 - From other parents
 - Newspapers/Radio/Television
 - Material sent to you by the School District or by the individual school
 - Social Media (e.g. Facebook/Twitter)
 - Other
5. Have you or anyone you know attended a vocational technical high school or vocational program now or in the past?
 - Yes
 - No
6. What is your opinion of the quality of the vocational technical education received by you or other students you know?
 - Very favorable
 - Somewhat favorable
 - Not very favorable
 - Not at all favorable
7. Do you have any children under the age of 15?
 - Yes
 - No
8. How likely would you be to send your child or children to a vocational/technical program for high school?
 - Very Likely
 - Somewhat Likely
 - Not Very Likely
 - Not Likely at All
9. What are the chief benefits of vocational education? (Check all that apply)
 - Vocational high schools or vocational programs provide students with good skills that help them find good jobs after graduation
 - Vocational high schools or vocational programs provide a good foundation for further training in skilled occupations and professions
 - Vocational schools or vocational programs provide a good foundation for pursuing community college or a 4-year college or university
 - Other (please specify)
10. Is there a specific occupational program to which you would or did send your child?
 - Yes
 - No
11. Which program?
12. Why do you consider vocational education not a good choice? (Check all that apply)
 - Vocational high schools or vocational programs do NOT provide students with skills that help them find good jobs at good pay after graduation
 - Vocational high schools or vocational programs do NOT provide a good foundation for further training in skilled occupations and professions
 - Vocational high schools or vocational programs do NOT provide a good foundation for pursuing community college or a 4-year college or university
 - Vocational Schools are for students who are not well-prepared to pursue a regular academic track in a comprehensive high school
 - I want my child or children to pursue an academic education leading to an occupation or profession requiring college
 - There is no vocational high school or vocational program close to where we live
 - I wanted my child or children to attend a vocational high school, but there were no slots available for them
 - Other
13. How old are you?
 - 20-34
 - 35-44
 - 45-54
 - 55-64
 - 65 or older

14. What is your highest level of education?

- Less than High School
- High School Graduate – Comprehensive High School
- High School Graduate – Vocational High School
- Community College
- Some 4-year College
- Bachelor’s Degree – 4-Year College
- Master’s Degree – Graduate Education
- Ph.D. or Professional Degree (e.g. M.D., Law Degree)

15. What is your gender?

- Male
- Female

16. What is your annual family income?

- Less than \$25,000
- \$25,001 - \$50,000
- \$50,001 - \$75,000
- \$75,001 - \$100,000
- \$100,001 - \$150,000
- \$150,000 +

