Vocational Career/Technical Schools— models of excellence for talented, ambitious and inspired Massachusetts students

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The History of MA Vocational Education

- **1906**
  - Massachusetts Commission on Industrial and Technical Education and the Act to Provide Further for Industrial Education
  - Made Massachusetts the first state to provide publicly funded industrial education, making it 'the Grandfather of Vocational Education.'
- **1908**
  - The Smith Vocational and Agricultural High School, Northampton and the New Bedford Independent Industrial School opened as the first vocational schools
- **1962**
  - Drive begun to create Regional Vocational-Technical High Schools across the state, eventually resulting in 26 regional vocational-technical and three regional agricultural schools in Massachusetts
- **1984**
  - Carl D. Perkins Vocational and Technical Education Act authorized
  - $1.3 billion federal dollars yearly are issued via grants to fund career and technical education programs in all 50 States.

MA Regional Vocational Education Today

True examples of school-based management, each with its own:

- School Committee
- Superintendent
- Budget, and
- Ability to create its own curricula and instructional policies and methods (within state frameworks, guidelines, and accountability measures)

Vocational schools serve ~ 27,000 students, with long waiting lists

Differences Between Applications and Available Spaces at MA Regional Vocational-Technical Schools (Class of 2012)

Name of Massachusetts Vocational Technical Program	Number of Applications	Available Spots	Difference (and/or wait list)
Assabet Valley RVTS	300	250	+50
Blackstone Valley RVTHS	800	300	+400
Blue Hills Regional VTHS	400	235	+165
Bristol-Plymouth Regional VTHS	600	346	+264
Essex Agricultural and Technical HS	420	130	+290
Norfolk County Agricultural High School	330	120	+110
Northeast Metro-Tech RVTHS	700	330	+370
Northern Berkshire (McCann) RVTHS	200	140	+160
Shawsheen Valley Regional VTHS	700	335	+365
Tri-County Regional Vocational Tech HS	460	250	+210
Worcester Technical High School	8000	400	+400

Waiting Lists

- Waiting lists have necessitated entrance criteria, such as:
  - Successful completion of math and English in sending grade
  - Limited number of unexcused absences
  - Acceptable discipline record, and
  - Recommendations and/or interviews

Career/Technical Programs Available to MA Students

Agriculture & Natural Resources Occupational Cluster	
Agricultural Mechanics	3
Animal Science	4
Environmental Science & Technology	4
Horticulture	18
Arts & Communication Services Occupational Cluster	
Design & Visual Communications	17
Graphic Communications	40
Radio & Television Broadcasting	3
Business & Consumer Services Occupational Cluster	
Cosmetology	38
Fashion Technology	5
Marketing	27
Office Technology	17

Construction Occupational Cluster	
Cabinetmaking	3
Carpentry	53
Electricity	44
Facilities Management	10
Heating - Ventilation - Air Conditioning - Refrigeration	19
Masonry & Tile Setting	8
Painting & Design Technologies	5
Plumbing	26
Sheet Metalworking	6
Education Occupational Cluster	
Early Education and Care	22
Health Services Occupational Cluster	
Dental Assisting	6
Health Assisting	39
Medical Assisting	6
Hospitality &Tourism Occupational Cluster	
Culinary Arts	52
Hospitality Management	5

Information Technology Services Occupational Cluster	
Information Support Services & Networking	20
Programming & Web Development	16
Manufacturing, Engineering & Technological Cluster	
Biotechnology	5
Drafting	28
Electronics	29
Engineering Technology/Pre-Engineering	27
Machine Tool Technology	27
Major Appliance Installation/Repairing	2
Metal Fabrication & Joining Technologies	35
Robotics and Automation Technology	2
Stationary Engineering	1
Telecommunications - Fiber Optics	2
Transportation Occupational Cluster	
Automotive Collision Repair & Refinishing	37
Automotive Technology	54
Diesel Technology	3
Marine Service Technology	2
Power Equipment Technology	3

Vocational Schools and Change

- Supported by research, vocational schools learned that the academic skills needed for entry-level career success are equal to skills needed for college entrance

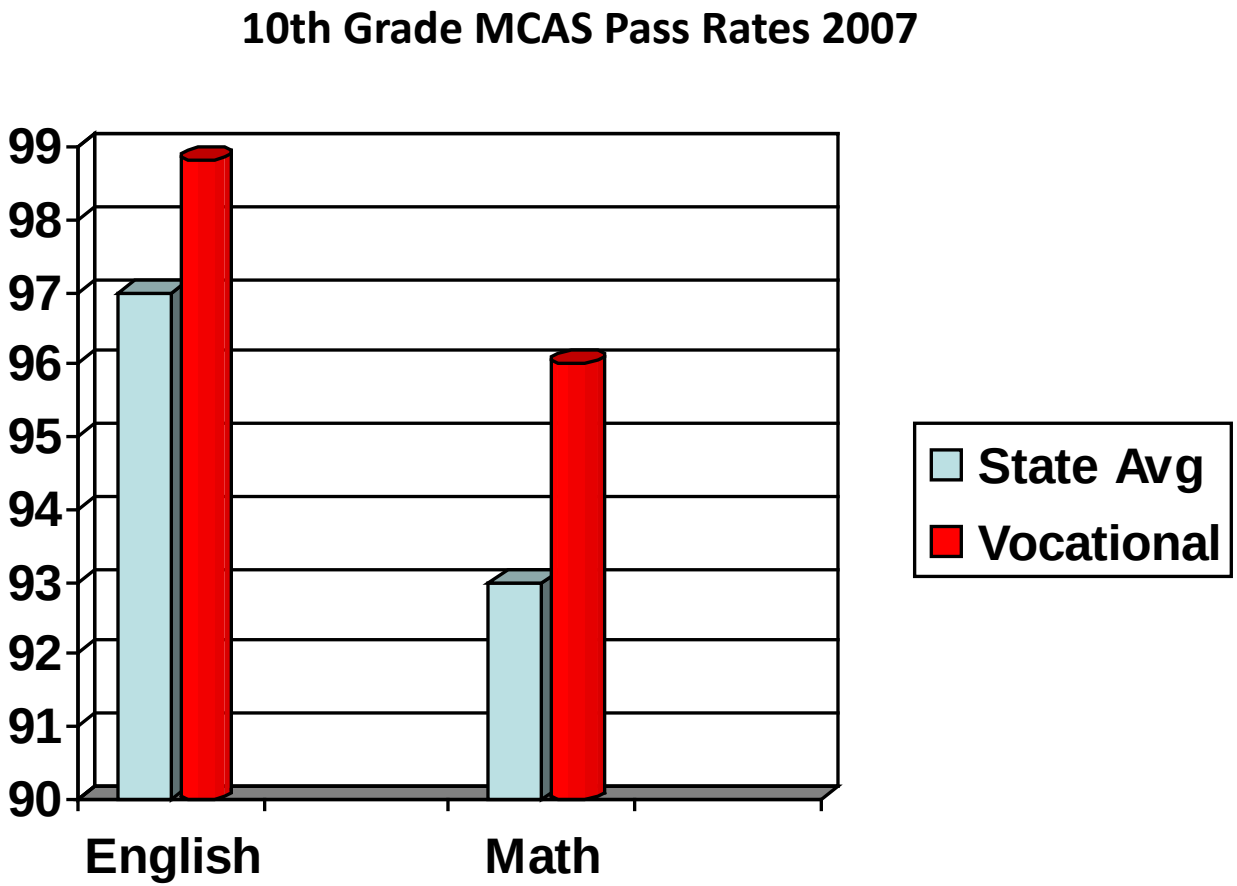
- Vocational schools now place place greater emphasis on academics than had been the case

- Change motivated by the high-stakes Massachusetts Comprehensive Assessment System (MCAS) testing

"MCAS really did us a favor, because now every high school in the Commonwealth is on a level playing field." Blue Hills Administrator

“MCAS was the best thing that ever happened to us.” Assabet Superintendent

Since shifting priorities, vocational-technical student pass rates continue to beat out the statewide rates on both the math and English portions of the MCAS



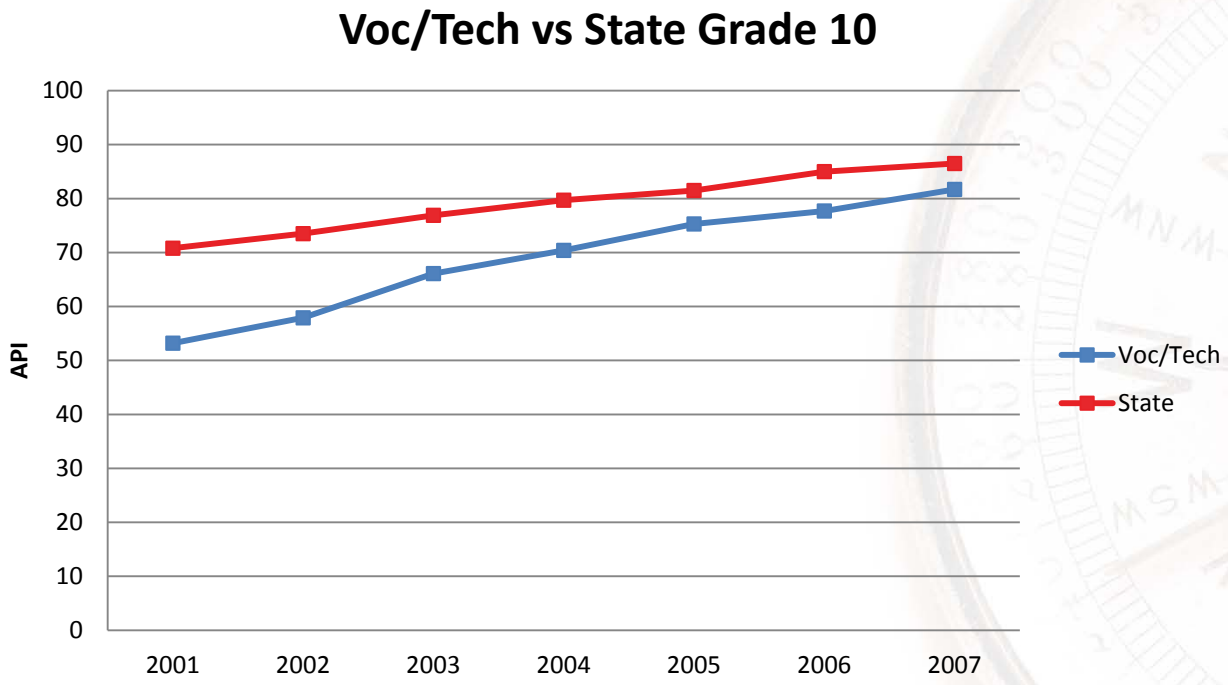
Integration

- **VTE faculty work together to merge academics and vocational training by emphasizing reading, writing, science and math skills across the academic and vocational curricula**

  - The trade manuals students will use in the field are typically written at up to the grade 14 reading level, and graduates' skill must match them
  - Math is a large part of most vocations, from the Pythagorean theorem in carpentry, to fuel burn rates in auto tech, to the complex algorithms of programming or robotics
  - Science is a large part of many shops—from mixing dyes in cosmetology, to biotechnology in the agriculture fields, to physics in metal fabrication

Performance gap is closing between RVT high schools and average state performance

- From almost 18 Proficiency Index points in 2001 to under 5 Proficiency Index points in 2011



More Success

Table 11: Annual Dropout Rates by School Type 2003-04 to 2010-11

	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11
Regular/Comprehensive Academic Schools (309)[1]	3.7%	3.7%	3.4%	3.7%	3.1%	3.0%	2.9%	2.8%
Vocational-Technical Total (39)	3.2%	3.0%	2.2%	2.6%	2.2%	1.9%	1.8%	1.6%
City/Town (9)	7.2%	6.0%	4.7%	5.5%	5.0%	5.1%	5.0%	4.4%
Regional/County/Independent (30)	2.1%	2.3%	1.5%	1.8%	1.4%	1.0%	0.9%	0.9%
Charter Schools (33)[2]	5.6%	6.1%	4.2%	6.4%	7.7%	3.8%	5.3%	4.2%
Schools Located in Cities[3] (171)	5.6%	5.8%	5.3%	5.7%	5.3%	4.8%	4.7%	4.5%
Schools Located in Towns (210)	2.0%	1.9%	1.6%	1.9%	1.6%	1.4%	1.4%	1.2%

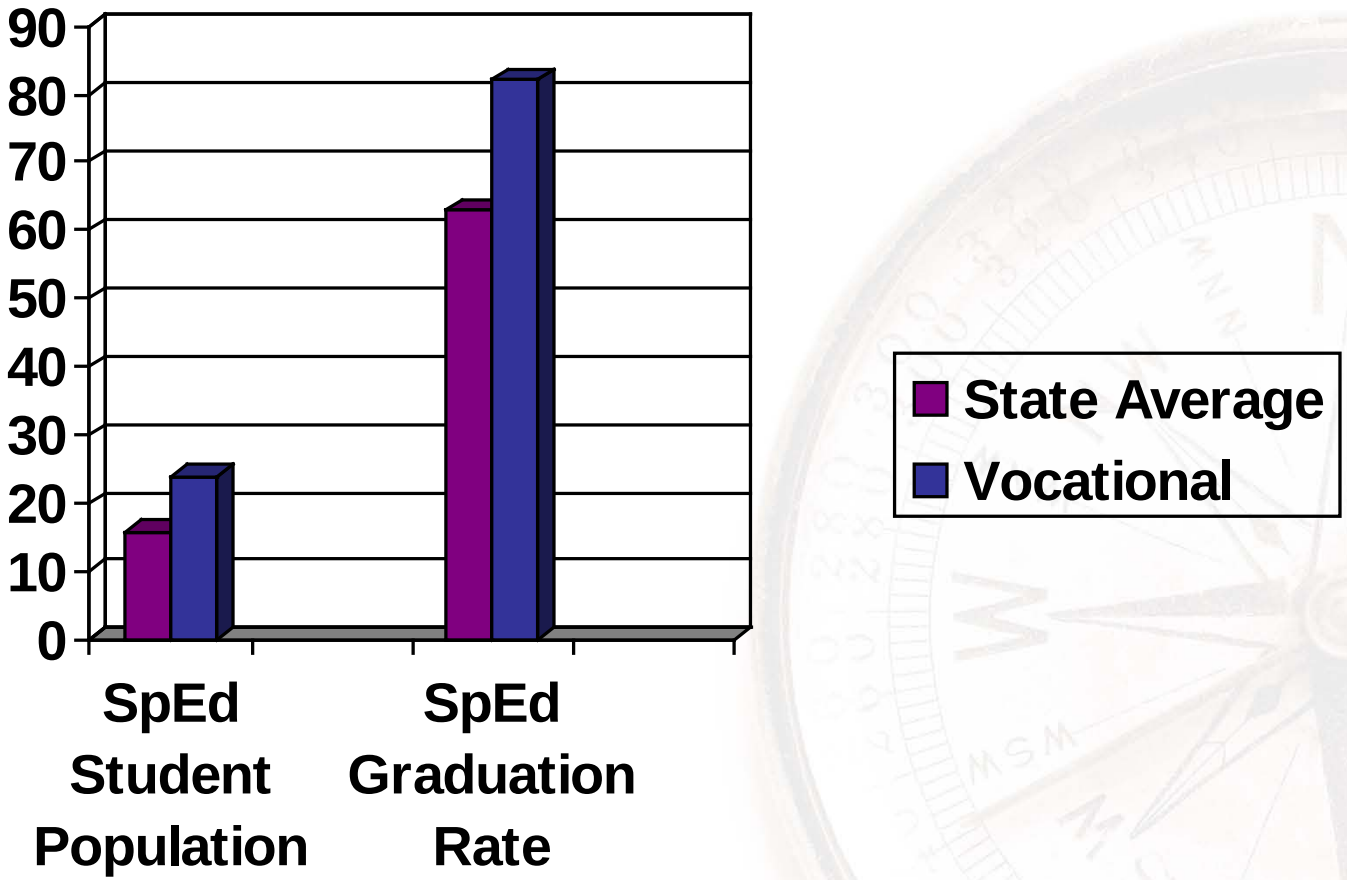
Vocational Schools' Special Education Success

- Massachusetts' regional vocational schools also have excellent outcomes with special needs students—even with higher populations

- While state high school special needs average is 17 percent, the regional vocational average is 25 percent—and four schools have greater than 37 percent of their students on IEP's

- The graduation rate of special needs students at vocational schools is almost 30 percent higher than the state average for special needs students: 82 versus 62.8 percent.

Special Education Success



Vocational Schools and the Business Community

- According to MBAE's *Preparing for the Future: Employer Perspectives on Work Readiness Skills:*

> " *Vocational school graduates are more job-ready than general education or college preparatory high school graduates. In fact, a number of participants felt that vocational high school graduates were often more job-ready than college graduates.*"

- Each program (shop) has its own dedicated advisory committee made up of industry professionals who advise VTE teachers on the skills that will be most marketable for their graduates

- With the addition of the Certificate of Occupational Proficiency, graduates have a credential that is not only recognized by industry but is backed by academic and professional standards

Recommendations and Policy Implications

Close adult relationships, individualized instruction to recognized benchmarks, and student choice have resulted in truly successful experiences for diverse populations of Massachusetts vocational and career/technical students for a century

- CVTE schools demonstrate how regional schools can thrive, while offering appropriate education to diverse students from up to twenty communities

- Vocational-technical schools should be used as models of how schools can turn around the performance of underserved student populations and low-performing schools

- Vocational schools imbedded in urban districts should get the autonomy that exists in the regional schools to make the changes and improvements that have been so successful in their sister institutions

Recommendations and Policy Implications

- Because of VCTE schools' success with at-risk students, urban centers should consider opening charter high schools based on the vocational-technical and career education model

- The success of technical career education should encourage other specialized education programs based on the vocational model for other kinds of talents/interests, such as the visual and performing arts, STEM, and the Humanities

- As educators look at the addition of authentic assessments to supplement (but not replace) MCAS exams, they should replicate the senior project programs that are graduation requirements at the majority of the Massachusett's VTE schools.

- VTE and CTE schools' enviable relationships with businesses should be studied as examples of best practice

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