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Technical Education Funding in Vermont, Maine, and Massachusetts

Vocational and Technical Education schools and programs are designed to teach practical and applied skills that are directly related to employment in current or emerging occupations.¹ This type of specialized education is also known as Career and Technical Education and may be referred to as CTE throughout the rest of this paper. CTE participation has been on a steady decline since 1992, with the percent of high school graduates earning CTE credits declining from 95% to 88%.² The decline in CTE participation has also been notable in Vermont, where there has been a decrease of nearly 6,000 students grades 9-12 who are enrolled in CTE programs since 2010.³ These declines are worth noting, as CTE programs are important tools for growing the economy and providing affordable access to credentials that could lead to high wage jobs for populations who do not always thrive in standard classroom environments.⁴ CTE programs have also been proven to be successful at moving first generation students and students living in poverty towards post-secondary credentials.⁵ Because of the known benefits of offering CTE programs, it is important to understand how different states fund and organize their CTE programs, so Vermont can best offer these opportunities to students.

In general, there are four ways states distribute funds for CTE programs: student-based formulas, unit-based formulas, cost-based formulas, and funding for CTE centers.⁶ With student-based formulas, the number of students enrolled in CTE determines the amount of state funding a school district receives. With unit-based formulas, states distribute funds based on measurable

¹ National Center for Education Statistics, “Vocational Education in The United States,” accessed March 28, 2021, <https://nces.ed.gov/pubs/web/95024-2.asp>.

² Albert Y. Liu and Laura Burns, “Public High School Students’ Career and Technical Education Coursetaking: 1992 to 2013,” *National Center of Education Statistics*, accessed April 18, 2021, <https://nces.ed.gov/pubs2020/2020010.pdf>.

³ Vermont Agency of Education, “School Reports,” accessed March 28, 2021, <https://education.vermont.gov/data-and-reporting/school-reports>.

⁴ Rebecca Holcombe and Heather Bouchey, “CTE Education in Vermont, Overview and Agency Priorities,” Vermont Agency of Education, last modified January 13, 2017, [https://legislature.vermont.gov/Documents/2018/WorkGroups/House%20Commerce/Agency%20of%20Education/W~Rebecca%20Holcombe~Career%20Technical%20Education%20\(CTE\)%20-%20Overview%20and%20Priorities~1-13-2017.pdf](https://legislature.vermont.gov/Documents/2018/WorkGroups/House%20Commerce/Agency%20of%20Education/W~Rebecca%20Holcombe~Career%20Technical%20Education%20(CTE)%20-%20Overview%20and%20Priorities~1-13-2017.pdf).

⁵ Holcombe and Bouchey, “CTE Education in Vermont.”

⁶ Tom Keily, Eric Syverson, and Alyssa Evans, “State Approaches to Secondary CTE Funding,” *Education Commission of the United States*, accessed April 1, 2021, <https://ednote.ecs.org/state-approaches-to-secondary-cte-funding/>.

units, such as number of instructors or necessary equipment. States that use cost-based formulas reimburse CTE centers for the specified cost of programs. In some state, CTE centers exist separately from high schools and are thus funded separately.⁷ Vermont has primarily student-based funding for CTE centers, Maine uses cost-based formulas, and Massachusetts uses unit-based formulas.⁸

The Perkins V Act

The Strengthening Career and Technical Education for the 21st Century Act (Perkins V) was signed into law by President Donald Trump in July of 2018.⁹ Perkins V is intended to increase access to high quality CTE programs and focuses on system alignment and program improvement. Perkins V plan development required each state to develop a 4-year plan that would be implemented in 2020 and updated after two years if needed.¹⁰

Section 3 of the Perkins V act defines Career and Technical Education as “organized educational activities” that:

(A) offer a sequence of courses that— (i) provides individuals with rigorous academic content and relevant technical knowledge and skills needed to prepare for further education and careers in current or emerging professions, which may include high-skill, high-wage, or in-demand industry sectors or occupations, which shall be, at the secondary level, aligned with the challenging State academic standards adopted by a State under section 1111(b)(1) of the Elementary and Secondary Education Act of 1965; (ii) provides technical skill proficiency or a recognized postsecondary credential, which may include an industry-recognized credential, a certificate, or an associate degree; and (iii) may include prerequisite courses (other than a remedial course) that meet the requirements of this subparagraph;

(B) include competency-based, work-based, or other applied learning that supports the development of academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of an industry, including entrepreneurship, of an individual;

(C) to the extent practicable, coordinate between secondary and postsecondary education programs through programs of study, which may include coordination through articulation agreements, early college high school programs, dual or concurrent enrollment program opportunities, or other credit transfer agreements that provide postsecondary credit or advanced standing; and

⁷ Keily, Syverson, and Evans, “State Approaches.”

⁸ Education Commission of the United States, “50 State Comparison,” Secondary Career and Technical Education, accessed April 1, 2021, <https://internal-search.ecs.org/comparisons/secondary-career-and-technical-education-all>.

⁹ Robert O’Donnell and Robert Hanna, Zoom interview with author, April 2, 2021.

¹⁰ Vermont Agency of Education, “Perkins V,” accessed April 18, 2021, <https://education.vermont.gov/student-learning/flexible-pathways/career-technical-education/perkins-v>.

(D) may include career exploration at the high school level or as early as the middle grades (as such term is defined in section 8101 of the Elementary and Secondary Education Act of 1965).¹¹

Vermont

Vermont currently has 15 career and technical education centers.¹² There are three types of CTE programs offered. The first type of program is Pre-Tech Exploratory Programs, which are for 9th and 10th graders, and serve as an introduction to all the programs at a regional center. The second program type is Pre-Tech Foundational Programs, which familiarize 9th and 10th graders with occupations in a specific career cluster and begin to teach them core academic and occupational skills and are incorporated into a 3-to-4-year sequence of CTE. The final type of program offered is Technical Education Programs, which are taught in half or full day models, and teach academic content along with occupational skills.¹³

Vermont's overall school system has a student-based funding formula, where each student is assigned a baseline cost to their education, including no special needs or services. Most CTE centers are attached to the largest high school in their region, and they receive 87% of the student's base amount from the student's home district.¹⁴ This means that the amount of funding CTE centers receive depends on how many students they pull from their home district. Vermont's state government also provides the CTE centers with a grant equal to 35% of the base amount per full time student. Additionally, if CTE centers grow by 20% or more in the previous year, the state allocates them another grant.¹⁵

There are multiple state and federal grants allocated to CTE initiatives, including the Perkins State Plan, and Innovation and Equipment grants. The Vermont Legislature makes \$500,000 annually available to fund equipment replacement for CTE centers, and The Agency of Education makes \$300,000 annually available to support program innovation.¹⁶

In line with Perkins V goals, Vermont is still working to develop a new state plan. There are four working groups—data & accountability, comprehensive needs assessment, post-secondary implementation, and secondary implementation. The plan is intended to ensure access to vulnerable populations and prioritize the investment of funds in a way that increases the capacity of smaller schools to promote career guidance and exploration.¹⁷

¹¹ Carl D. Perkins Career and Technical Education Act of 2006, <https://www.govinfo.gov/content/pkg/COMPS-3096/pdf/COMPS-3096.pdf>.

¹² Vermont Career & Technical Education, accessed April 1, 2021, <http://www.vtcte.org>.

¹³ State of Vermont Agency of Education, "Career and Technical Education Programs," Vermont Official State Website, accessed April 18, 2021, <https://education.vermont.gov/student-learning/flexible-pathways/career-technical-education/programs>.

¹⁴ EdBuild, "FundEd: State Policy Analysis," accessed April 18, 2021, <http://funded.edbuild.org/state/VT>.

¹⁵ EdBuild, "FundEd: State Policy Analysis."

¹⁶ State of Vermont Agency of Education, "Career and Technical Education Initiatives," Vermont Official State Website, accessed March 24, 2021, <https://education.vermont.gov/student-learning/flexible-pathways/career-technical-education/initiatives>.

¹⁷ Vermont Agency of Education, "Perkins V."

Maine

Maine has 27 career and technical high schools.¹⁸ As of 2017, fourteen percent of 9th through 12th graders were in one CTE program and six percent of students' education was focused in CTE.¹⁹ These rates are lower than the national and New England averages for proportion of public high school students who participate in CTE.²⁰ The Maine Department of Education reported that, as of 2015, students in CTE programs were three percent more likely to graduate high school than the state average.²¹ According to a 2017 report done by the Association for Supervision and Curriculum Development, students who participate in at least one CTE experience in Maine experienced slightly higher levels of success than those who did not.²² They are three percent more likely to graduate, one percent to enroll in a two-year college, two percent more likely to be employed after graduation, and make more money after graduation. According to a report from the Manpower Demonstration Research Corporation, students who take concentrated CTE courses benefit from significant.²³

Maine CTE schools receive funding from three sources. These three sources are state education funding, federal education grants, and tuition reimbursement from sending schools.²⁴ The Carl D. Perkins grant is the largest federal education grant for CTE programs. The Carl D. Perkins's Act of 2006 provides a source of federal funding to states for the improvement of CTE programs.²⁵ For the 2019-2020 school year, roughly \$54 million was allocated to Maine's CTE centers from state funding.²⁶

Title 20-A, Chapter 207-A, Subchapter 3, Subsection 4725 of Maine's education statute gives instruction for CTE. It states that "each school administrative unit operating a secondary school shall provide career and technical instruction through a [CTE] center or region."²⁷

¹⁸ Maine Career and Technical Education Portal, accessed March 24, 2021, <http://mainecte.org/>.

¹⁹ Educate Maine, "Career Technical Education (CTE): Increasing Student Success by 100%," Maine State Chamber of Commerce, accessed March 24, 2021, https://www.educatemaine.org/docs/17-029_EDME_CTE-Policy-Brief-FNL.pdf.

²⁰ Educate Maine, "Career Technical Education (CTE): Increasing Student Success by 100%."

²¹ Maine Department of Education, "Consolidated Annual Report," accessed April 1, 2021, www.maine.gov/doe/cte/reports/index.html.

²² Association for Supervision and Curriculum Development, "2017 Annual Report," accessed April 12, 2021, <http://www.ascd.org/ASCD/pdf/siteASCD/annualreport/2017/ar17-activateeducate.pdf>.

²³ James J. Kemple, "Career Academies: Long-term Impacts on Labor Market Outcomes, Educational Attainment, And Transitions to Adulthood," Manpower Demonstration Research Corporation, accessed April 12, 2021, https://www.mdrc.org/sites/default/files/full_50.pdf.

²⁴ Maine Career and Technical Education Portal, "Where do Maine CTE schools received funding from?," accessed March 24, 2021, <https://mainecte.org/faqs/where-do-maine-cte-schools-receive-funding-from/>.

²⁵ Perkins Collaborative Resource Network, "Perkins IV," accessed March 24, 2021, <https://cte.ed.gov/legislation/about-perkins-iv#:~:text=%E2%80%8BThe%20Carl%20D.,education%20programs%20across%20the%20nation>.

²⁶ Maine Department of Education, "FY 20 CTE Centers & Regions Summary Estimate Funding Levels," FY 2019-20 Details, accessed March 24, 2021, <https://www.maine.gov/doe/funding/gpa/eps/19-20>.

²⁷ Maine Legislature, "§4725. Career and Technical Instruction," Title 20-A: Education, Part 3: Elementary and Secondary Education, Chapter 207-A: Instruction, Subchapter 3: Secondary Schools, accessed March 24, 2021, <http://www.mainelegislature.org/legis/statutes/20-A/title20-Asec4725.html>.

In 2017, Maine expanded CTE opportunities. Public Law Chapter 171 requires schools to provide access to appropriate CTE for middle school students.²⁸

Massachusetts

Currently, there are 88 Chapter 74-approved vocational and technical education schools or programs in The Commonwealth of Massachusetts.²⁹ About 20 percent of Massachusetts high school students participate “in some form of career vocational technical education.”³⁰

The Commonwealth of Massachusetts uses a unit-based funding formula for schools.³¹ This means funding to Massachusetts schools is based on numerous factors, including the number of instructors, the number of administrators, and equipment cost.³² This provides a need for formulas and regulations for allocating educational funding throughout the state. One of the Directors of School Finance for the Massachusetts Department of Elementary and Secondary Education Robert O’Donnell admits, “[Educational] funding in Massachusetts is complex.”³³

The Chapter 70 program is Massachusetts’ major program that allocates aid to public elementary and secondary schools. The program establishes minimum spending requirements for each district and each municipality’s share of school costs. While some districts choose to spend more than what is required, some spend less (there are fiscal penalties if the spending falls less than 5 percent of the set minimum).³⁴ The funding that Chapter 70 grants is based on the town or region’s ability to pay for the minimum spending requirements. After that ability to spend is assessed, Chapter 70 funding fills the gap between what the district or municipality can pay and the minimum spending requirement.³⁵ In 2019, the total expenditures per pupil in Massachusetts came to about \$16,588.³⁶ Four percent of this per-pupil funding came from federal funds and 96 percent came from state and local funds.³⁷

²⁸ An Act To Enable Earlier Introduction of Career and Technical Education in Maine Schools, S.P. 554 - L.D. 1576, Chapter 171 (2017), accessed March 24, 2021, <http://www.mainelegislature.org/legis/bills/getPDF.asp?paper=SP0554&item=3&num=128>.

²⁹ Massachusetts Department of Elementary and Secondary Education, “Massachusetts Pathways Map,” accessed April 7, 2021, <http://massconnecting.org/pathwaymapping/default.asp#mapping>.

³⁰ Massachusetts Department of Elementary and Secondary Education, “CVTE Outcomes Across Massachusetts,” accessed April 7, 2021, <https://www.doe.mass.edu/ccte/cvte/data/>.

³¹ Education Commission of the States, “50-State Comparison Secondary Career and Technical Education,” accessed April 3, 2021, <https://internal-search.ecs.org/comparisons/secondary-career-and-technical-education-02>.

³² Keily, Syverson, and Evans, “State Approaches.”

³³ Robert O’Donnell, Zoom interview with author, April 2, 2021.

³⁴ Massachusetts Department of Elementary and Secondary Education, “Chapter 70 Foundation Budget and Net School Spending,” 2018, accessed March 24, 2021, <https://profiles.doe.mass.edu/statereport/netschoolspendingtrend.aspx>.

³⁵ Robert O’Donnell and Robert Hanna, Zoom interview with author, April 2, 2021.

³⁶ Massachusetts Department of Elementary and Secondary Education, “Per Pupil Expenditures by Source of Funds,” accessed March 24, 2021, <https://profiles.doe.mass.edu/profiles/finance.aspx?orgcode=00000000&orgtypecode=5&leftNavID=501&fycode=2019>.

³⁷ Massachusetts Department of Elementary and Secondary Education, “Per Pupil Expenditures.”

In Massachusetts' General Education Laws, Chapter 74 discusses Vocational Education specifically.³⁸ The Legislative body defines Vocational-technical education as “organized education programs offering sequences of courses designed to educate and prepare students for both employment and continuing academic and occupational preparation.”³⁹ Technical education programs that meet the Perkins Act definition of vocational technical education are deemed “Chapter 74-approved programs.”⁴⁰

Chapter 74 grants funding power for vocational technical education to multiple entities. The power of allocating federal funds is granted to the state treasurer for vocational-technical education.⁴¹ The trustees of vocational education schools along with the approval of the commissioner prepare financial estimates to maintain their schools for the next fiscal year.⁴² Section 42I instructs that the trustees shall prepare and submit a detailed budget as the governor and general court may direct.⁴³

A Chapter 74-approved CTE program resides in Weymouth, Massachusetts. Julieanne M. Gamache is the Director of Career and Technical education in the Weymouth Public high school. Along with the public-school education, there is a CTE program available to Weymouth students grades 9 through 12.⁴⁴ CTE-enrolled students at Weymouth High go to their “shop” classes at least once a day, unlike the common CTE specific high schools that often implement a rotating schedule of one week of shop education and one week of regular education.⁴⁵ The number of shop classes the Weymouth student attends each day increases in the specific grade level with 12th grade students attending up to five “shop” classes each school day. The town of Weymouth has a long history of vocational and tech education. Funding for the Weymouth CTE programs comes from the Perkins grant and the town district school committee funding. With CTE programs like culinary and cosmetology, there is a “revolving account” to grant specific programs a business-like freedom. The programs who receive income from the offered services take that money to fund certain supplies like hair supplies and baking instruments. Julieanne Gamache says there has been an increase in student applications for the Weymouth CTE programs. She claims that this rise in interest might be due to, “decreasing CTE stigma,” “increasing public knowledge of the program,” and “supportive administrators” at the school.⁴⁶ Furthermore, she believes that the COVID-19 pandemic showed many people the need for more unionized jobs like plumbing, electrical work, etc. With the increase of CTE program demand,

³⁸ The 192nd General Court of the Commonwealth of Massachusetts, “Mass Gen Laws Chapter 74 § 13,”

<https://malegislature.gov/Laws/GeneralLaws/PartI/TitleXII/Chapter74>.

³⁹ Mass Gen Laws Chapter 74 § 1, <https://malegislature.gov/Laws/GeneralLaws/PartI/TitleXII/Chapter74/Section1>.

⁴⁰ Massachusetts Department of Elementary and Secondary Education, “Chapter 74 Programs,” last modified January 28, 2021, <https://www.doe.mass.edu/ccte/cvte/programs/>.

⁴¹ Mass Gen Laws Chapter 74 § 20,

<https://malegislature.gov/Laws/GeneralLaws/PartI/TitleXII/Chapter74/Section20>.

⁴² Mass Gen Laws Chapter 74 § 28,

<https://malegislature.gov/Laws/GeneralLaws/PartI/TitleXII/Chapter74/Section28>.

⁴³ Mass Gen Laws Chapter 74 § 42I,

<https://malegislature.gov/Laws/GeneralLaws/PartI/TitleXII/Chapter74/Section42I>.

⁴⁴ Weymouth High School, “Career & Technical Education,” accessed April 8, 2021,

<https://www.weymouthschools.org/weymouth-high-school/career-technical-education>.

⁴⁵ Julieanne M. Gamache, telephone interview with author, April 8, 2021.

⁴⁶ Julieanne M. Gamache, telephone interview with author, April 8, 2021.

Gamache believes that soon, there will need to be discussions to address the need for more space to grant more enrollment opportunities to Weymouth pupils. Gamache proclaims, “I love my kids [enrolled in the Weymouth high CTE program] ... My kids go to college, training schools, the military, and to good paying jobs.”⁴⁷

The Financial Year 2020 preliminary budget estimates proposed by the Governor of Massachusetts are based upon “An Act to Promote Equity and Excellence in Education.”⁴⁸ The Act proposed by the Governor for FY20 was proposed in January 2019 but not passed by the legislature.⁴⁹ The Act proposed was a bill that “sets targets for changes to the foundation budget calculation, to be fully phased-in by FY26.”⁵⁰ The Act would have changed the formula implemented through the state educational budget and consequently affect vocational school funding. Currently, vocational programs that are Chapter 74-approved receive the same rate of funding in the foundation budget.⁵¹ The proposed legislation “proposes a feasibility study of tiered vocational program rates in the foundation budget.”⁵² This tiered rate proposal would possibly create more equity between vocational schools since the costs of programs vary widely.⁵³

Although Governor Baker’s “Act to Promote Equity and Excellence in Education” was not passed, another bill named “An Act Relative to Education Opportunity for Students” aka “The Student Opportunity Act” was ultimately adopted in November 2019.⁵⁴ The Fiscal Year of 2022 will be the first year the Act will be implemented. The Student Opportunity Act makes changes to the Chapter 70 funding formula creating higher foundation budget rates in areas of “benefits and fixed charges, guidance and psychological services, special education out of district tuition, English learners, and low-income students to be phased over seven years.”⁵⁵ What this means for vocational and technical education in Massachusetts is that the Act “also increases the assumed in-district special education enrollment to 5% for vocational students and 4% for non-vocational students. In FY2022, these assumed rates have been increased by 1/7th of the gap to 4.82%fg and 3.82%, respectively.”⁵⁶

⁴⁷ Julieanne M. Gamache, telephone interview with author, April 8, 2021.

⁴⁸ Massachusetts Department of Elementary and Secondary Education, “FY20 Preliminary Chapter 70 Aid and Net School Spending Requirements,” last modified January 23, 2019, accessed April 19, 2021, <https://www.doe.mass.edu/finance/chapter70/fy2020/prelim.html>.

⁴⁹ The 192nd General Court of the Commonwealth of Massachusetts, “An Act to Promote Equity and Excellence in Education,” accessed April 13, 2021, <https://malegislature.gov/Bills/191/H70>.

⁵⁰ Massachusetts Department of Elementary and Secondary Education, “FY20.”

⁵¹ Massachusetts Department of Elementary and Secondary Education, “FY20.”

⁵² Massachusetts Department of Elementary and Secondary Education, “FY20.”

⁵³ Massachusetts Department of Elementary and Secondary Education, “FY20.”

⁵⁴ Massachusetts Department of Elementary and Secondary Education, “FY2022 Preliminary Chapter 70 Aid and Net School Spending Requirements,” last modified March 3, 2021, accessed April 19, 2021, <https://www.doe.mass.edu/finance/chapter70/fy2022/preliminary.html>.

⁵⁵ Massachusetts Department of Elementary and Secondary Education, “FY2022.”

⁵⁶ Massachusetts Department of Elementary and Secondary Education, “FY2022.”

Conclusion

There are several ways that different states fund Career and Technical Education (CTE) programs including student-based formulas, unit-based formulas, cost-based formulas, and funding individual CTE centers. CTE programs are important tools for growing the economy and providing affordable access to credentials that could lead to high wage jobs for populations who do not always thrive in standard classroom environments.⁵⁷ As Julieanne Gamache puts it, CTE students “go to college, training schools, the military, and to good paying jobs.”⁵⁸

This report was completed on April 19, 2021, by Maya Berger, Marjorie Brown, and Erin Tevnan under the supervision of VLRS Director, Professor Anthony “Jack” Gierzynski in response to a request from Representative Lori Houghton.

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Disclaimer: The material contained in the report does not reflect the official policy of the University of Vermont.

⁵⁷ Holcombe and Bouchey, “CTE Education in Vermont.”

⁵⁸ Julieanne M. Gamache, telephone interview with author, April 8, 2021.