



Issues and Solutions for Career and Technical Education in Virginia 2018-2019

Educators and business representatives from across Virginia, along with 10 organizations representing career and technical education (CTE) professionals, developed this document. Virginia ACTE welcomes comments on these issues from CTE stakeholders—citizens, parents, and members of the boards that govern Virginia’s public education. We seek public policy support from anyone interested in providing diversity of opportunity for all of Virginia’s children on the following issues.

Virginia Association for Career and Technical Education
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IN BRIEF

1. *Virginia ACTE supports funding to sustain the CTE Resource Center, to replace its obsolete data structure and website, to support its mission of providing free resources for the development of CTE curricula, and to continue its support of the commonwealth’s CTE educators.*
2. *Virginia ACTE supports increased efforts by Virginia’s colleges and universities to implement and, where they already exist, strengthen undergraduate and graduate teacher preparation programs in CTE.*
3. *Virginia ACTE supports continued priority funding for CTE classroom lab equipment and program improvements to prepare students for a competitive workforce and further education.*
4. *Virginia ACTE supports funding for meaningful, industry-recognized standards, assessments, and credentials for CTE programs, staff, and students.*
5. *Virginia ACTE supports funding for the Governor’s STEM Academies and Governor’s Health Sciences Academies, which prepare students for in-demand, high-wage, and high-skill careers in Virginia.*

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POLICY ISSUE 1

Virginia ACTE supports funding to sustain the CTE Resource Center and replace its obsolete data structure and website, to support its mission of providing free resources for the development of CTE curricula, and to continue its support of the commonwealth's CTE educators.

Rationale

- Virginia Educational Resource System Online (VERSO), the CTE Resource Center's website and data repository, are the primary distribution points for all CTE curriculum for the commonwealth's public school CTE administrators and educators. The Center and its services and resources are free to CTE educators in the state.
- The CTE Resource Center is unique and valuable to Virginia's educators as well as to CTE programs across the United States; no other state offers such resources to its CTE teachers.

The Center's online portal is more meaningful than ever because of Virginia's high-stakes graduation requirements:

- It is the repository for the commonwealth's CTE state-approved curricula: the course frameworks, competencies, definitions, SOL correlations, correlations to national standards and state regulations, and student competency records, which allow teachers to track performance on the competencies.
- It provides credentialing information, which includes the provider and cost, for teachers, administrators, and students in Virginia's school divisions.

The system faces significant problems:

- The database is old and has long been eclipsed by more-modern structures. The data program, developed in 2001, is written in an obsolete, open-source programming language, Zope, with no support or programmers who still use that language.
- The data are housed in an obsolete structure that is "suffocating" under a buildup of information. There currently is no way to delete or archive any information, which means that, in the near future, with limited space for data storage, the system will run out of storage and stop working.
- The Center's website is gradually falling out of compliance and never has been responsive; that is, adaptable to a variety of devices used in schools and classrooms.

Upgrades will move the commonwealth forward technologically:

- A data structure that uses a widely known language and architecture would make any new structure easily adaptable and updatable.
- Cloud-based storage would move the Center, its systems, and its database of curricula forward technologically and reduce costs for physical equipment and maintenance, storage, and servers.
- Bringing the database and its structures (both internal and website) up to date and making them easier to maintain is critical to the effective operation of the CTE Resource Center. More importantly, the information provided by

the Center is vital to the continuity and quality of instruction in classrooms across the commonwealth.

Virginia ACTE proposes the following recommendations to replace the CTE Resource Center's data system, continue with CTE curriculum development, continue to provide free resources for the commonwealth's CTE educators, and sustain funding for the CTE Resource Center:

- 1.1 Provide \$1.2 million for the replacement of the CTE Resource Center's online repository of CTE essential competencies, industry certifications, and administrative planning information for Virginia's educators and students.
- 1.2 Restore full funding to sustain the work of the CTE Resource Center.
- 1.3 Increase line-item funding to the CTE Resource Center.

POLICY ISSUE 2

Virginia ACTE supports increased efforts by Virginia's colleges and universities to implement and, where they already exist, strengthen undergraduate and graduate teacher-preparation programs in CTE.

Rationale

Virginia continues to experience a critical shortage of qualified teachers, especially in its most challenged schools.

- For SY 2017–2018, CTE ranked fourth in Virginia's top-10 list of critical teacher shortage areas.
- Since 2003–2004, CTE has been ranked among the top 10 areas of critical teacher shortages.
- School divisions face increasing difficulty finding qualified teachers for CTE programs, and this shortage is predicted to become more serious within the next five years.
- Demand for CTE teachers and programs is increasing:
 - Student enrollment in CTE programs during 2017–2018 totaled 639,840 (duplicate count; some students took more than one course).
 - The updated Workplace Readiness Skills for the Commonwealth (taught in all CTE courses) are a clear priority for Virginia's employers, often valued more highly than academic grades or test scores.
 - Teachers in four CTE program areas (Agricultural Education, Business and Information Technology, Family and Consumer Sciences, and Marketing) provide the largest number of instructors endorsed to teach Economics and Personal Finance, a graduation requirement for all Virginia students.

Highly qualified CTE teachers must be available to meet increasing demand. Teacher preparation programs at the state's colleges and universities (sometimes in cooperation with Virginia's community colleges), along with selected special initiatives, offer some solutions to these shortages, but more needs to be done.

- The 2016 General Assembly included CTE as a critical-shortage teaching discipline, which allows students enrolled in full-time or part-time approved undergraduate or graduate teacher programs to apply for the Virginia Teaching Scholarship Loan Program in critical shortage areas.

Virginia ACTE proposes the following recommendations to strengthen and expand Virginia’s supply of highly qualified CTE teachers:

- 2.1 The Board of Education and the State Council of Higher Education in Virginia (SCHEV) should prioritize support for teacher-education programs in CTE in Virginia’s colleges and universities to provide for a supply of motivated and dedicated teachers.
- 2.2 The career switcher program should require rigorous pedagogy instruction, realistic endorsement requirements with relevant certifications, and professional experience.
- 2.3 The General Assembly should increase the amount of funding available for the Virginia Teaching Scholarship Loan Program and set aside a portion of the funds specifically for CTE teacher-shortage areas. In this program, recipients who teach two years in Virginia are not required to repay the loan.
- 2.4 SCHEV and the Virginia Community College System (VCCS) should work together to endorse Virginia Teachers for Tomorrow as a dual-enrollment community college course that is eligible for transfer to teacher-education programs at four-year colleges and universities.

POLICY ISSUE 3

Virginia ACTE supports continued priority funding for CTE classroom lab equipment and program improvement to prepare students for a competitive workforce and further education.

Rationale

School divisions in the state exceed the minimum number of CTE programs (at least three are required) and have multiple labs that must be updated regularly to meet industry and local workplace needs. Under the present funding level, local and federal funds support the largest percentages of CTE equipment resources to meet state requirements and the future needs of the Virginia economy.

- General Assembly funding allocated to CTE during the previous 12 sessions has provided essential support for helping to keep Virginia’s CTE classrooms equipped with the technology and materials students will use in the workplace.
- The 2018 General Assembly again level-funded CTE equipment at \$1.8 million with a base allocation of \$2,000 and the remainder distributed on the basis of student enrollment in secondary CTE courses.
- Funding in the amount of \$1.4 million was allocated for equipment in high-skill, in-demand, and fast-growing industry sectors identified by the Virginia Board of Workforce Development and based on data from the U.S. Bureau of Labor Statistics and the Virginia Employment Commission.

- Funds provided by the General Assembly are distributed among 132 school divisions, including middle and high schools, many local technical centers, and 10 regional career and technical centers. These funds are used to provide project-based and industry-relevant educational experiences not otherwise available to public school students.
- More than 639,000 students (duplicate count) took one or more CTE courses during the 2017-2018 school year, indicating daily use of CTE equipment and labs.
- The average cost of equipment and software updates in a standard CTE lab ranges from \$60,000 to more than \$250,000.
- Virginia’s “new collar” workforce is experiencing shortages of qualified workers, indicating a major skills gap.
- Virginia’s public schools can help close the skills gap through adequately funded CTE programs.

Virginia ACTE proposes the following recommendations to strengthen Virginia’s CTE programs:

- 3.1 Increase funding by \$1 million for CTE equipment updates and replacements.
- 3.2 Virginia’s policy leaders must continue priority funding for CTE program expansion to meet the demands of high-skill, in-demand, and fast-growth industry sectors.
- 3.3 Virginia’s policy leaders should increase funding for equipment and software updates as needed for credentialing assessments as required by industry standards.
- 3.4 The base allocation level should be changed from \$2,000 to \$5,000 to provide an equitable base distribution of funds to each school division, especially in smaller and rural school divisions. Currently, only 18.22 percent of the state equipment funding is used for the base allocation and 81.78 percent of the funding is allocated based on student enrollment.

POLICY ISSUE 4

Virginia ACTE supports funding for meaningful, industry-recognized standards, assessments, and credentials for CTE programs, staff, and students.

Rationale

Employers value credentials because they help to determine the skill and education level of job applicants without having to administer reassessments and because credentials help reduce operating costs associated with employee acquisition, training, and retention.

Increased opportunities during high school to earn industry credentials, such as state licenses and nationally recognized or stackable industry certifications, are critical to career readiness, as are financial, occupational competency, and Workplace Readiness Skills assessments.

Employment projections in Virginia, as stated by Trailblazers labor market data, include four million job openings between 2014-2024. It is projected that half a million new jobs will be created in Virginia. Approximately 45 percent of Virginia’s current labor market is comprised of jobs requiring less than a baccalaureate degree but more than a high school diploma (Virginia

Board of Workforce Development). These “new collar” job opportunities will continue to increase.

- Virginia’s CTE programs currently provide multiple avenues for students to earn credentials and continue their education beyond high school.
- The current Standard Diploma requirements for students entering the ninth grade prior to 2018-2019 include an earned industry credential, a state licensure examination, a national occupational competency assessment, the Virginia Workplace Readiness Skills assessment, or satisfactory competency-based instruction in a particular subject area where a credential is not readily available.
- The Profile of a Virginia Graduate initiatives increase opportunities for all students to earn industry credentials beginning with ninth-graders in 2018-2019.
- The current Standards of Quality state, “Career and technical education programs shall be aligned with industry and professional standard certifications, where they exist.” (Code of Virginia §22.1-253.13:1B)
- Earned industry credentials are part of the Virginia Index of Performance program, which recognizes schools and school divisions for advanced learning and student achievement.
- Virginia school accreditation reflects overall academic achievement. The number of graduates earning a Virginia Board of Education-approved industry certification, an industry pathway certification, a state licensure, or an occupational competency credential in a CTE program as student-selected verified credit factor into the calculation of final high school accreditation status.
- The College and Career Readiness section of the School Quality Profile documents earned industry credentials.
- The 2018 General Assembly continued to appropriate the following at level funding distributed to 132 school divisions:
 - more than \$1.8 million for industry certification examinations, licensure tests, and occupational-competency examinations
 - \$308,655 for the Workplace Readiness Skills assessment and other board-approved industry certifications
 - \$500,000 for industry credentialing for students and professional development for instructors in STEM-Health and CTE programs
 - \$1.3 million for information-technology industry credentials.
- Virginia has led the nation with industry-valued credentialing initiatives for over a decade, and during the 2017-2018 school year, students throughout the commonwealth earned more than 159,000 industry credentials.
- More than 59,700 students took the Workplace Readiness Skills assessment in SY 2017–2018 (Virginia Department of Education).
- School divisions would have difficulty accruing value-added points in the school accreditation process and ensuring students meet the requirements for the Standard Diploma and the expectations of the Profile of the Virginia Graduate.
- Virginia Code §22.1-298.1 was amended in 2015 to state that “teachers seeking an initial licensure with an endorsement in career and technical education shall have an industry certification credential in the area in which the teacher seeks endorsement. If the teacher has not attained an industry certification credential, the Board may,

upon request of the employing school division or educational agency, issue the teacher a provisional license to allow time for the teacher to attain such credential.”

- Virginia’s future workforce must be retooled and reskilled to respond to new growth opportunities in high-tech, high-growth-potential industries.

Virginia ACTE proposes the following recommendations to strengthen Virginia’s CTE system:

- 4.1 Increase funding by \$1 million for credentialing assessments.
- 4.2 The General Assembly should alleviate the burden on school divisions by increasing funding for credentialing assessments to help students complete industry certifications, occupational competency exams, Workplace Readiness Skills assessments, state licensures, and other valid, high-quality assessments, as approved by the Virginia Board of Education, as a part of their secondary CTE studies, Standard Diploma requirements, and the Profile of a Virginia Graduate requirement.
- 4.3 Funding should continue to be available for CTE teachers to attain Virginia Board of Education-approved, industry-recognized certifications.
- 4.4 The General Assembly should provide support and expand credentialing initiatives at the secondary-education level and recognize the importance of secondary-education credentialing initiatives for success at the postsecondary level and for career readiness.

POLICY ISSUE 5

Virginia ACTE supports funding for the Governor’s STEM Academies and Governor’s Health Sciences Academies, which prepare students for in-demand, high-wage, and high-skill careers in Virginia.

Rationale

- Research shows that students demonstrate higher levels of learning and performance when they learn essential academic skills in a relevant context and when those skills are applied to real-world settings, as they are in CTE courses and programs.
- Secondary CTE programs build upon elementary STEM experiences and integrate STEM initiatives in all Career Clusters by teaching performance-based and team-based learning, critical thinking, problem solving, as well as the design process.
- Twenty-two Governor’s STEM Academies have been implemented across the commonwealth and are designed to expand options for students to acquire STEM literacy and technical knowledge and skills, while earning an industry credential.
- Nine Governor’s Health Sciences Academies are now in place and represent a partnership between public school divisions, healthcare institutions, the private sector, and institutions of higher education to deliver rigorous programs to prepare students for careers in the health sciences.
- Governor’s STEM Academies, Governor’s Health Sciences Academies, and other STEM initiatives, relevant to all CTE programs, are growing.

- These academies provide options and experiences for students to acquire STEM literacy and other critical problem-solving skills, knowledge, technological literacy, performance-based instruction and assessment, and credentials that will prepare them for postsecondary education and for in-demand, high-wage, and high-skill careers in Virginia.
- *The 2018 General Assembly provided \$600,000 in competitive innovation program grants for in-demand, fast-growth industry sectors, with priority given to state-identified challenged schools and the Governor’s STEM Academies and Governor’s Health Sciences Academies.*
- There is a need to provide reliable, sustainable, and identifiable funding streams for the Governor’s STEM Academies to ensure that labs are updated to meet the needs of rapidly changing curricula and to provide a rigorous and relevant program of study based on industry needs.

Virginia ACTE proposes the following recommendations to expand the integration of Virginia’s CTE curriculum with the Standards of Learning and STEM initiatives:

- 5.1 Increase funding by \$1 million for Governor’s STEM Academies and Governor’s Health Sciences Academies for sustainable and reliable funding streams.
- 5.2 Improve support for a performance-based educational system that incorporates the standards for career and technological literacy, authentic assessment, and the infrastructure for college and career readiness in all public schools.
- 5.3 Recognize CTE as an integral component of K–12 STEM initiatives and acknowledge CTE’s unique ability to provide STEM instruction in secondary education in the commonwealth.
- 5.4 Increase funding for competitive innovation program grants to support current and future Governor’s STEM Academies and Governor’s Health Sciences Academies.

Affiliated Organizations

Virginia Association for Teachers of Family and Consumer Sciences
Virginia Association of Agricultural Educators
Virginia Association of Career and Technical Education Administrators
Virginia Association of Marketing Educators
Virginia Association of Trade and Industrial Educators
Virginia Association of Career and Technical Education—Special Needs Division
Virginia Business Education Association
Virginia Health and Medical Sciences Educators Association
Virginia Technology and Engineering Education Association

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