

Career & Technical Education: Preparing today's students to power tomorrow's economy

BOCES CTE PROGRAMS ARE KEEPING PACE WITH CHANGING WORKFORCE NEEDS

Across New York, high school students are learning how to program drones for commercial applications, designing lighting for stage productions, learning about installing alternative energy systems such as wind and solar, building and coding robots to solve real-world challenges, and operating cutting-edge machinery in advanced manufacturing settings. Career & Technical Education, or CTE, is evolving to meet the needs of a changing economy – and is appealing to a new generation of students looking to get the best possible head-start on their futures.

Boards of Cooperative Educational Services, BOCES, across New York have developed programs like those described above, and dozens more, in recent years. These offerings were developed in cooperation with business partners, ensuring that important investments in education and opportunities for young people are connected to regional economic priorities across the state. With this in mind, the purpose of this paper is to highlight the role that BOCES CTE programs are playing to help fill the need for skilled workers in a modern economy and provide students with quality and cost-effective learning opportunities. Working with business and industry, the goal is to propel a strong economy and help students have successful and productive futures.

Leading the way in a changing economy

While a generation ago, CTE programs may have been thought of as a way to prepare high school students to go directly into the workforce, the reality is that today's programs are so much more dynamic. In most cases, students learn directly from classroom instructors and in job settings with business and industry partners. But, the learning doesn't stop there. Every BOCES in the state has articulation agreements

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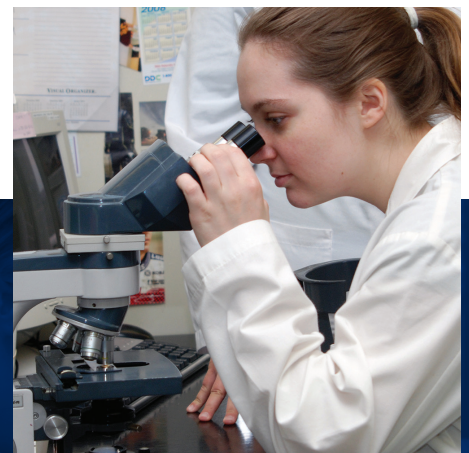


IN THE 2018-19 SCHOOL
YEAR ALONE, MORE THAN
36,000 HIGH SCHOOL
STUDENTS ACROSS
NEW YORK DEVELOPED
COLLEGE AND CAREER
SKILLS THROUGH BOCES
CTE PROGRAMS.

About BOCES of New York State

For 70 years, Boards of Cooperative Educational Services (BOCES) have provided shared educational programs and services to school districts across the state. With BOCES as a partner, school districts work together to develop shared programs – such as career & technical education – that serve students from all districts regardless of enrollment, income or tax base. Today there are 37 BOCES serving schools, students and communities across New York state. The map on the back of this publication highlights the location of the career & technical education campuses, in particular, that they operate.

Learn more about BOCES as an educator, facilitator, and engine for economic growth at boces.org.



**Your Mission
Drives Our Mission**

Boards of Cooperative Educational Services
BOCES
of NEW YORK STATE

with colleges and universities that enable CTE students to earn college credits while still in high school. In fact, more than half of 2018 BOCES graduates went on to college, according to a survey of the 37 BOCES conducted in the fall of 2019.

Similar to how CTE programs have changed, we know that today's labor market is much more multi-faceted than a generation ago. Consider programs that have recently been created in some regions such as "Advanced Manufacturing" or "Health Science Careers." Programs like this may connect students to an internship or apprenticeship with an area technology firm or hospital while they also earn college credits. Students may then go on to pursue advanced industry credentials or a two- or four-year degree, while maintaining a connection to business and industry. In some cases, an employer may pay for this higher education. CTE programs that feature strong business partnerships are the catalyst for this type of career journey. This approach provides students with not only the education and relationships necessary, as well as real-world experiences that will help them adapt and grow as their career advances and the job market changes.

Many of the CTE programs that have been created in the last three years are directly connected to high-growth industry. Of the nearly 70 programs introduced in this time, nearly two-thirds are in sectors where job growth is likely to be highest in the coming decade, according to recent projections from the U.S. Bureau of Labor Statistics. These include: health care, construction, computers and mathematics, renewable energy, education and service industries. As our economy continues to evolve and the population continues to age, CTE students are poised to play an increasingly pivotal role. Yet, the idea is not to simply prepare students for employment right away. It is to give them a relevant and meaningful entrance to fields in which there will be significant opportunities in the coming years.

Ready for work; Closing the "Middle Skills Gap"

While CTE programs continue to change, the availability of robust offerings that do prepare students to find their way quickly into the workforce with a quality job cannot be overstated. Between 2018 and 2028, jobs for electricians, heating, ventilation and air conditioning specialists, broadcast and sound engineers, plumbers, and chefs and head cooks are all projected to grow faster than average – 10 percent or more in some cases. Across the state, BOCES have a proven track record of providing graduates with the knowledge, skills, experiences and connections needed to be successful in these areas and many others.

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IN THE LAST THREE YEARS ALONE, BOCES ACROSS THE STATE HAVE IMPLEMENTED NEARLY 70 NEW PROGRAMS WITH THE HELP OF BUSINESS PARTNERSHIPS.

MANY OF THESE PROGRAMS ARE DIRECTLY ALIGNED WITH SPECIFIC REGIONAL ECONOMIC DEVELOPMENT COUNCIL PRIORITIES IN THEIR REGION.

PREPARING THE WORKFORCE OF TOMORROW

BOCES CTE centers house a diverse range of programs statewide that will help propel regional, state and national economies. Programs added in BOCES across the state in recent years include:

- Advanced Manufacturing
- Automated Manufacturing & Machining
- Commercial Drone Aviation Pilot
- Computer Science and App Development
- Electrical Trade and Alternative Energy
- Emergency Medical Technician
- Engineering Technology
- Entertainment Technology
- Graphics & Gaming Design
- Industrial Electric Technologies
- IT Specialist
- Network Cabling Technician
- Robotics/Mechatronics
- Sports Conditioning & Exercise Science
- Sterile Processing Technician

In fact, many organizations at the local, regional and national level are calling for a renewed focus on Career & Technical Education because of a lack of skilled workers in many areas. The National Skills Coalition warns of a “middle skills gap” and the impact it will have on our economy. The coalition defines middle-skill jobs as those that require education beyond high school but not a four-year degree. Examples include jobs in construction, manufacturing, technology, automotive fields, hospitality, and a variety of other trades and service areas. “Middle skills” jobs account for the largest part of the labor market in our state and national economy, but “key industries in New York are unable to find enough sufficiently trained workers to fill these jobs,” according to the coalition.

From construction to culinary arts, healthcare to HVAC, there are many opportunities that fall into the categories of “middle skills.” CTE programs at the BOCES centers across the state are best positioned to provide students with the training they need to be successful in these fields and continually take their training and education to the next level if they choose to.

Partners make it happen: Working with business and industry

Representatives of more than 4,700 New York businesses serve on BOCES CTE advisory councils across the state. These valued partners provide critical input to help make sure that existing programs are updated in alignment with industry trends, and that new programs are connected to the economic development goals of each region. As areas of the state prioritize growth in specific sectors through the Regional Economic Development Council, business partners work with BOCES to help tailor programs that will help meet these needs. Examples include initiatives in medicine, health care labs, high-tech manufacturing, hospitality, cybersecurity and more, depending on the region.

The vast network of business partners results in highly relevant CTE programs and a pipeline of skilled workers who circulate millions of dollars back into the local economy.

Part of a well-rounded education

For students, CTE combines active, hands-on learning with the opportunity to translate what happens in the classroom into the real-world. Students make connections with potential future employers and either get a head-start on the cost of college or, if their programs prepare them to go directly to work, they can forgo college debt altogether. Those who enroll in CTE courses remain students in their home school district, and can continue to take advantage of interscholastic athletics and other extracurricular opportunities. In addition, many CTE students take part in SkillsUSA or other industry-specific organizations or clubs.

In recent years, New York state has updated its graduation requirements to enable successful completion of a CTE program to count toward earning a Regents Diploma. Additionally, the state has added the Career Development and Occupational Studies (CDOS) commencement credential. Students who satisfy CDOS requirements leave high school with this credential showing that they have had a variety of career readiness and work-based learning experiences, and are ready for employment. Regardless of a students’ areas of interest and career or educational goals, a CTE program will provide them with exposure to valuable skills and experiences that will help them in life.



**THROUGH LEARNING
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RECOGNIZED CREDENTIAL.**

National Skills Coalition

CTE BY THE NUMBERS

36,718

Students in BOCES
CTE Programs, 2018-19

96%

Students enrolled in CTE
programs who graduated
from high school, 2018-19

52%

Students who reported enrolling
in college after graduation
(average of all BOCES)

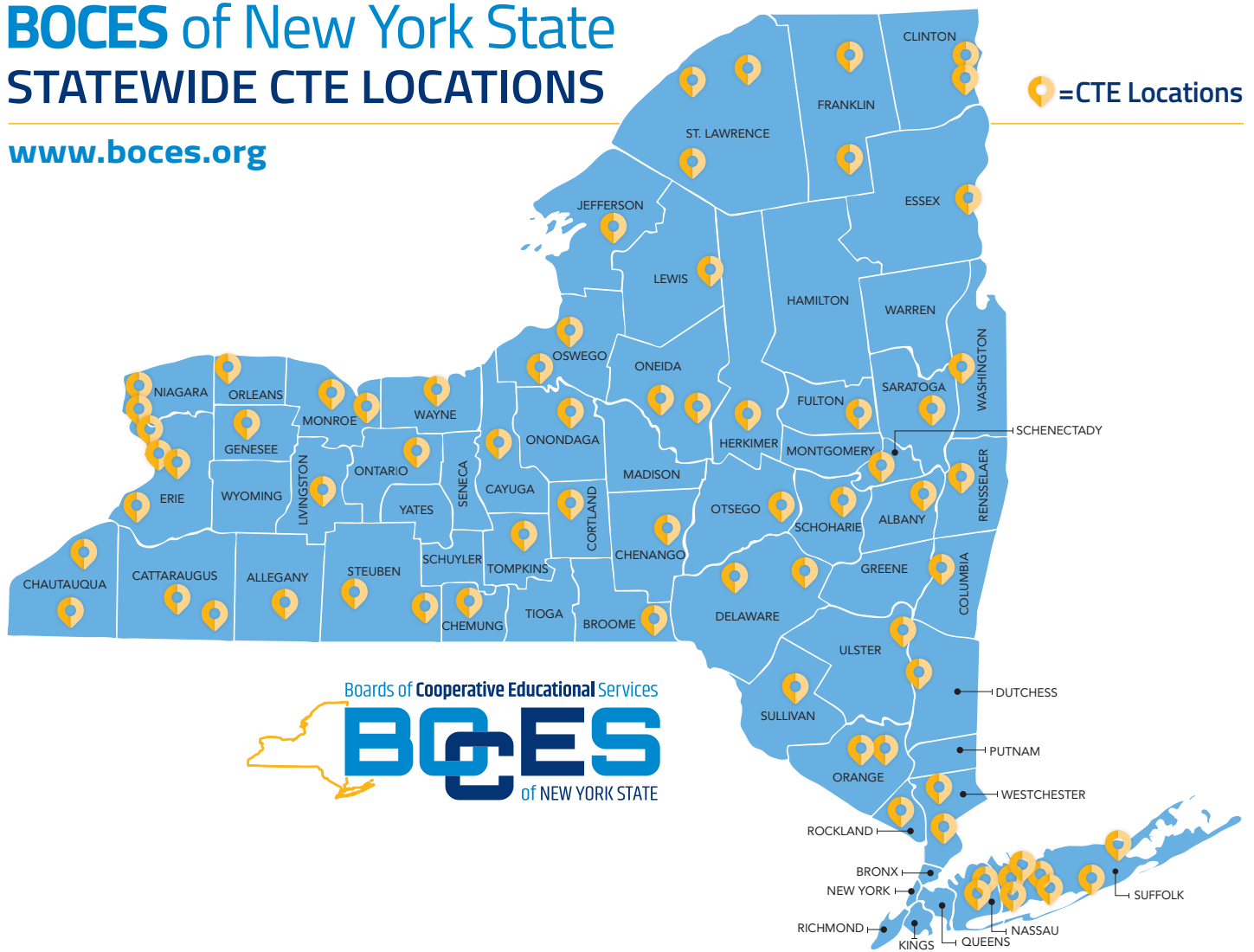
35%

Students who reported being
employed after graduation
(average of all BOCES)

Source: Fall 2019 BOCES of NYS Survey

BOCES of New York State STATEWIDE CTE LOCATIONS

www.boces.org



CTE is part of the solution

BOCES leaders believe that more real-world learning opportunities for students and stronger connections between education and business partners is the key to maintaining a strong economy and growing opportunities for young people. We all can play a role in this.

Educators: Continue to highlight for students the many opportunities they have to prepare for future success.

Students and families: Learn more about programs available and consider attending a CTE open house in your region.

Public policy makers: We appreciate the increasing focus in the importance of CTE and encourage continued support and investments in it.

Business and industry leaders: We appreciate your support and partnership and ask you to continue to work with us as you see needs and opportunities in your region.

Career & Technical Education has come so far in recent years, and by working together, we can build on what has been accomplished and ensure that it is an engine of economic growth and a springboard to student opportunities today, tomorrow and beyond.