

Obstacles and Opportunities

CREATING CAREER AND
TECHNICAL EDUCATION
PATHWAYS FOR STUDENTS
WITH DISABILITIES



A Report by Advocates for Children of New York
December 2016

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About Advocates for Children

Since its founding in 1971, Advocates for Children of New York (AFC) has been protecting the education-related needs of children most at risk of academic failure or school-based discrimination due to such factors as poverty, disability, race, ethnicity, language barriers, immigration status, homelessness, or involvement in the child welfare or juvenile justice system. AFC's mission is to promote access to the best education New York can provide for all students, especially students of color and students from low-income backgrounds. AFC uses integrated strategies to advance systemic reform, empower families and communities, and advocate for the educational rights of individual students.

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Executive Summary

In New York State, students with disabilities are among the populations most at risk of dropping out and/or not graduating from high school. According to the New York State Education Department (NYSED), approximately 13% of students with disabilities from the 2011 cohort¹ dropped out of high school before their senior year—a rate nearly double that for general education students.² In 2015, while the four-year graduation rate for general education students ticked up two points to 83.1%, the rate for students with disabilities remained approximately stagnant at 49.8%—a gap of more than 33 percentage points. According to the most recent year for which national data is available, the gap in graduation rates between students with disabilities in New York and their general education counterparts was the sixth widest in the country.³

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While no fix can single-handedly address the disparity in graduation outcomes, high school-level Career and Technical Education (CTE) may help close the gap. Educators and policymakers have long-recognized CTE programs—in which high school students receive technical and job skills training alongside academic study—as a strategy for engaging and motivating at-risk populations. With hands-on, project-based curricula and real life connections, CTE can motivate learners, like students with disabilities, who might feel alienated by or otherwise struggle in a traditional classroom setting. Indeed, CTE programs in New York consistently show promise in keeping students with disabilities engaged in school and on-track for graduation. But despite these positive results, access to CTE for students with disabilities is uneven, often varying significantly by geography. Additionally, in recent years, proponents have sought to refashion and raise the profile of CTE, with new programs often focusing on emerging fields related to Science, Technology, Engineering and Mathematics (STEM). Many of these new programs have been developed in response to industry-identified needs, but they may inadvertently introduce new barriers for students with disabilities who want to participate.

¹ Students who entered high school in the 2011-12 school year and who would ordinarily graduate in spring 2015.

² New York State Education Department, 2016; data analysis by Advocates for Children.

³ U.S. Department of Education, *Ed Data Express*, 2016; data analysis by Advocates for Children

As education officials at the state and local levels expand and refine CTE programming in New York, it is important that students with disabilities have equal access to the full range of CTE options and that new programs be developed with a goal of maximizing opportunities for these students to benefit. In service of this goal, this paper uses publicly-available data to examine the current involvement of students with disabilities in New York's high school CTE programs. Through stakeholder input, the paper also explores the challenges and barriers that students with disabilities face in accessing these programs and obtaining a high school diploma.

Finally, this paper offers changes in policy and practice that may help enhance the participation and success rates of students with disabilities in CTE programs. These recommendations, described in detail beginning on page 20, are organized in three main areas:

► *Increase access and make programs more flexible.*

CTE program admission, curricula, facilities, and assessments should be made more accessible to students with disabilities. Importantly, the state should expand the number of technical assessments approved as end-of-program tests for CTE programs, with an emphasis on identifying performance-based assessments that could be used in lieu of a written test. Doing so would provide more students—including students with disabilities—with the option to substitute a passing score on a CTE exam in place of one of the five Regents exams otherwise required for graduation. Additionally, students with disabilities should have access to appropriate accommodations for all the tests.

► *Increase and target resources.*

The State should work with districts to develop CTE programs in content areas and/or geographic regions where students with disabilities are underserved. Additional resources should be allocated for supports and services for students with disabilities in CTE classrooms and for professional development to ensure that CTE instructors are properly trained in working with students with Individualized Education Programs (IEPs) and that special education staff are trained to integrate CTE participation into students' IEPs.

► *Increase data gathering and transparency.*

The State should collect and publicly report on data concerning enrollment of and outcomes for students with disabilities in CTE programs. Where students with disabilities are underrepresented, the State should work with districts and Boards of Cooperative Educational Services (BOCES) to undertake measures—such as those cited above—to identify and address barriers. Lastly, education officials should seek to raise public awareness about CTE among students with disabilities and their parents, and seek guidance and advice from stakeholders on improving access.

While not exhaustive, we offer these recommendations as guiding principles for education officials and administrators engaged in efforts to expand and refine CTE in New York State.

CTE in New York State

CTE is an educational strategy for providing students with the academic, technical, and employability skills and knowledge to pursue postsecondary training or higher education and enter a career field prepared for ongoing learning.⁴ The New York State Education Department (NYSED) classifies CTE programs according to six career majors: agriculture; business and marketing; family and consumer sciences; health occupations; trade, technical and industrial; and technology. These are further broken down into 16 “career clusters,” which themselves encompass over 400 program categories ranging from Forestry to Cosmetics to Robotics.⁵

At the high school level, CTE in New York is delivered through CTE-designated high schools, career academies that exist as a school-within-a-school, or through Boards of Cooperative Educational Services (BOCES),⁶ which provide shared CTE programs to multiple school districts, often through area career centers. Programs seeking formal NYSED approval undertake a specific protocol of development and review by CTE teachers, academic teachers, postsecondary providers, industry/business representatives, local school districts, and NYSED.⁷ Securing NYSED approval qualifies schools to receive additional federal CTE funding, and students in approved programs are eligible for additional benefits and recognition, such as the 4+1 option discussed below, not available to students in non-approved programs.

New York is among the growing list of states that formally recognize CTE achievement on high school diplomas. Students may receive a so-called “technical endorsement” on their diplomas following completion of a program of study in a given program area, passing an approved technical assessment, and meeting all other requirements for a high school diploma. Additionally, in April 2015, New York State approved a CTE pathway to graduation, through which students who successfully complete CTE coursework in a state-approved program may substitute a passing score

⁴ “Up to the Challenge: The Role of Career and Technical Education and 21st Century Skills in College and Career Readiness” (Association for Career and Technical Education, National Association of State Directors of Career Technical Education Consortium and Partnership for 21st Century Skills, October 2010), http://www.p21.org/storage/documents/CTE_Oct2010.pdf.

⁵ “Classification of Instructional Programs Codes (CIP): CTE : P-12 : NYSED,” accessed September 28, 2016, <http://www.p12.nysed.gov/cte/Data/CIPcodes.html>.

⁶ All but nine of New York’s more than 700 school districts belong to one of the State’s 37 BOCES. The so-called “Big Five Districts,” which include New York City, Buffalo, Rochester, Syracuse and Yonkers, are not permitted to be a part of BOCES. For the purpose of this report, however, the NYC Public School system—which provides CTE services to a significant number of students—is considered alongside the 37 BOCES and included in aggregate analyses. (The other four Big Five cities serve much smaller student populations and are not considered alongside the BOCES for this paper.)

⁷ Schools or districts may also choose to develop CTE programs without official NYSED approval. For the purposes of analysis, this paper examines only programs that have received approval and for which data is available.

on a technical assessment in place of one of the five New York State Regents Exams ordinarily required for graduation. Dubbed the “4+1 option,” this new pathway holds promise for some students who struggle with the State’s graduation exams. The State has not released outcomes data for the first full year this option was available to students. However, based on the list of state-approved technical assessments⁸—which align with only a portion of programs currently in operation across New York State—some speculate that the 4+1 option is being underutilized.⁹

Renewed policymaker, industry leader, and public interest in CTE—both in New York and nationally—has resulted in the launch of new programs in recent years. In New York City alone, there are over 300 CTE programs, with 34 CTE-focused high schools newly opened between 2002 and 2015. Of the nine new high schools opened in the 2014-15 school year, six integrate CTE programs into their respective curricula. Owing to promising outcomes and positive media attention, a few program models such as Pathways in Technology Early College High School (P-Tech) and City Polytechnic High School of Engineering, Architecture, and Technology, have been enthusiastically tapped for replication and expansion. Statewide, NYSED has approved over 221 new programs since fall 2013, not including programs already up-and-running while awaiting state sign-off. According to the latest data publicly available, CTE programs in New York serve over 140,000 students¹⁰ through more than 1,000 programs across the state.¹¹

⁸ Notably, the list of technical assessments approved by NYSED for a CTE graduation pathway is significantly shorter than the list of approved assessments that can be used to qualify for a CTE diploma endorsement.

⁹ “Career and Technical Education Programs Are in Vogue. So Why Is It so Hard to Start One?,” *Chalkbeat*, August 30, 2016, <http://www.chalkbeat.org/posts/ny/2016/08/30/career-and-technical-programs-are-in-vogue-so-why-is-it-so-hard-to-start-one/>.

¹⁰ “Perkins Data Explorer,” Custom Report, accessed November 21, 2016, <https://perkins.ed.gov/pims/DataExplorer/CTEParticipant>.

¹¹ “Approved Programs : CTE : P-12 : NYSED,” accessed September 28, 2016, <http://www.p12.nysed.gov/cte/ctepolicy/approved.html>.

Engaging Students with Disabilities through CTE

Benefits for Students with Disabilities

CTE provides students with opportunities to acquire the skills required in the current labor market, including critical thinking, collaboration, problem solving, innovation, teamwork, and communication. High quality CTE programs are especially well-positioned to help address some of the challenges faced by students with disabilities in traditional educational settings. Research shows that students who participate in CTE programs are less likely to drop out of high school and more likely to be engaged and successful in academic courses than their peers.¹² A key benefit of CTE is that it offers contextualized learning for students, with ways to master technical and academic content within the context of a specific career pathway. This focus on applied learning helps students who might otherwise disengage with school to see the relevance of what they are learning and its connection to career opportunities and life goals. Many programs also offer novel opportunities to assess student proficiency, such as through hands-on performance assessments—of particular value to students with disabilities who may have trouble demonstrating what they know through more traditional standardized exams.

Through work-based learning experiences—often a feature of CTE—students are exposed to different careers, work habits, and job culture. Students with disabilities who successfully pursue CTE are more likely to experience improved prospects for employment, earnings, and overall economic success.^{13,14,15} Effectively deployed, CTE provides students with the academic and technical skills, knowledge, and training necessary to succeed in future careers and to become lifelong learners.

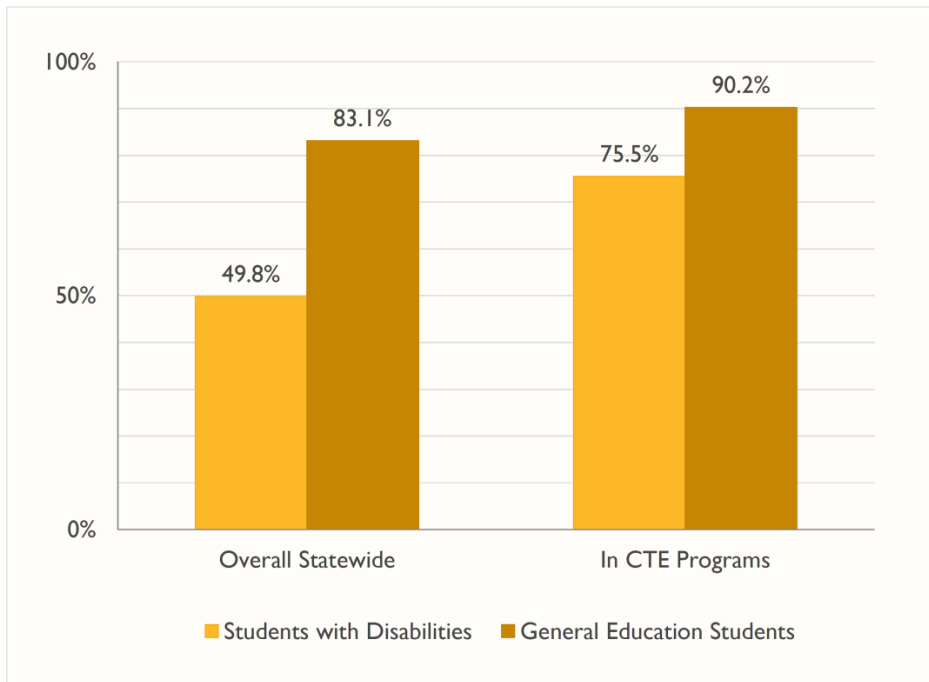
¹² Plank, Stephen B. (2001) *A Question of Balance: CTE, Academic Courses, High School Persistence, and Student Achievement*, <https://www.acteonline.org/CTETodayOct14>.

¹³ Kenneth C. Gray and Edwin L. Herr, *Other Ways to Win: Creating Alternatives for High School Graduates*, Third Edition (Thousand Oaks, CA: Corwin Press, 2006).

¹⁴ Michael W. Harvey, “Vocational-Technical Education: A Logical Approach to Dropout Prevention for Secondary Special Education,” *Preventing School Failure* 45, no. 3 (Spring 2001): 108.

¹⁵ Michael E. Wonacott, “Students with Disabilities in Career and Technical Education.,” *ERIC Digest*, 2001, <http://eric.ed.gov/?id=ED459324>.

FIGURE 1
2015 Graduation rates by disability status and CTE concentrator status



Source: New York State Education Department, 2014-15; Advocates for Children Analysis

In New York State, students with disabilities in CTE programs graduate from high school at higher rates than their counterparts who do not pursue CTE. Figure 1 shows statewide graduation rates for CTE concentrators¹⁶ as compared to the overall graduation rates, both for students with disabilities and their general education peers. In 2015, over 75% of students with disabilities who were CTE concentrators graduated from high school as compared to only about 50% of students with disabilities overall—a difference of over 25%. While the size of this difference varies by geography, all BOCES show increased graduation rates for students with disabilities who are CTE concentrators. Moreover, concentrating in CTE programs also helps narrow the graduation gap between students with disabilities and general education students. The graduation rate for CTE concentrators with disabilities is about 15% less than for general education CTE concentrators, in contrast to the 33% gap in rates for these groups overall.

A number of factors may help explain these improved outcomes for CTE concentrators with disabilities. First, there are typically more opportunities for differentiated instruction in CTE, which can help instructors meet individual learning needs. CTE’s hands-on experiences include auditory, visual, kinesthetic, and tactile activities, offering myriad avenues through which to help students

¹⁶ CTE “concentrators” are students who have completed at least two sequenced CTE courses (equivalent to two full school-year courses) out of a three course cohesive concentration in a local high school or have successfully completed two-thirds of his/her program in a BOCES or technical high school.

engage with the content, process, and products of the instruction. Students can participate according to their specific interests, learning preferences and academic strengths. Second, students make meaningful connections to learning as they make real-life connections to CTE coursework. Academic class content is often abstract and unrelated to students' interests, experiences, and goals. Students with disabilities in CTE classes are better able to understand the purpose and outcome of their efforts. Learning in the context of real-world skills-building heightens students' motivation, interest, and ambition—helping keep them engaged and on-track for graduation.

Third, CTE is well-suited to a range of active teaching strategies beyond lecture-style instruction. Students with disabilities can connect to content through activities such as movement, reflection, or discussion. These opportunities help position students at the center of the learning process and encourage them to take initiative for their own learning. Students are actively engaged in discussing, planning, creating, and evaluating their own work. Finally, students in CTE programs have multiple opportunities to practice and repeat particular skills and tasks. Such repetition can help them store new information for the long-term.

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CTE Participation Rates for Students with Disabilities

In the 2014-15 school year, 21,061—or 15%—of the more than 140,000 students in New York's CTE programs were students with disabilities. The percentage of CTE participants¹⁷ who are students with disabilities has remained fairly consistent in recent years. Generally speaking, as overall CTE enrollment goes up or down, there tends to be a commensurate increase or decrease in participation of students with disabilities. Encouragingly, the statewide CTE participation rate for students with disabilities is comparable to the percentage of students with disabilities overall and consistently compares favorably to national trends.¹⁸

What cannot be determined from available data is whether students with disabilities enjoy equitable access to the full range of CTE options offered in New York. In decades past, CTE programs, then called “vocational education,” had the reputation as a “dumping ground” for students deemed unlikely to continue on to college—namely economically disadvantaged students, students of color, and students with disabilities. Today, CTE champions actively work to distance CTE from this image, and indeed, new programs are often distinct from their “voc ed” forbearers in terms of content and design. Many focus on STEM-oriented areas like robotics, software engineering, or

¹⁷ According to NYSED and in line with U.S. Department of Education reporting guidelines, a CTE “Participant” is defined as any student who completed at least one CTE course (equivalent to one full school-year course).

¹⁸ In the 2014-15 school year, approximately 10.5% of CTE participants nationwide were students with disabilities, as compared to 15.0% in New York.

advanced manufacturing and are designed to lead into postsecondary education or continued training. As these newer models of CTE gain in popularity and become more competitive, students previously drawn into CTE programs may risk being excluded from these options.

Unfortunately, while NYSED requires districts and BOCES to report participation rates in CTE overall, it apparently does not collect data¹⁹ on the participation of traditionally vulnerable groups—like students with disabilities—by program type. So it is currently not possible for the state to determine whether students with disabilities are over-represented in, say, culinary arts and under-represented in computer networking. In order to ensure that students with disabilities have the same access to available programs as their general education peers, the State should aggressively monitor participation rates by program area and disability status and make these data publicly available. Where disparities are detected, the State should initiate targeted, well-resourced interventions designed to eliminate participation gaps at the program level.

Under-Representation of Students with Disabilities among CTE Concentrators

The participation rates discussed in the previous section include *all* students who completed at least one CTE course, whether or not they pursued additional coursework within a sequence of courses. Looking just at CTE *concentrators*—students who have completed a significant number of credits in a CTE course of study (see footnote 16) – helps us analyze the characteristics of students that have more sustained engagement in CTE.

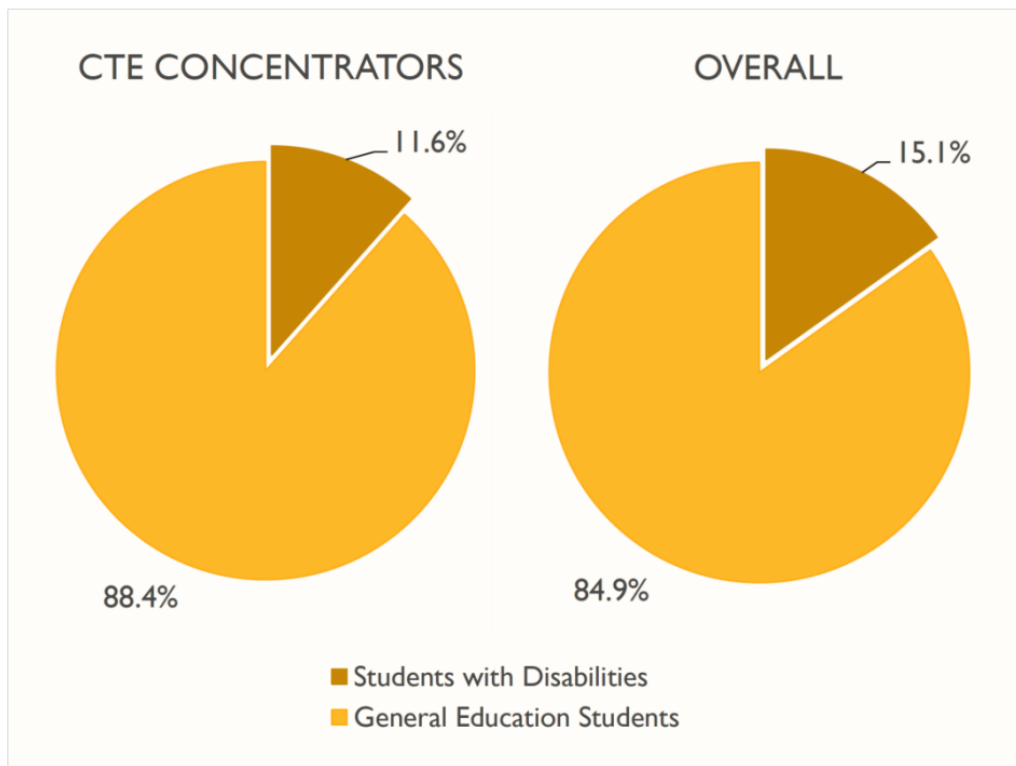
The pie charts in Figure 2 show the distribution of CTE concentrators reported for the 2014-15 school year by disability status. Students with disabilities represent just 11.6% of CTE concentrators, about four percentage points below what we would expect given their enrollment in the overall cohort. Notable also is the discrepancy in the percentage of students who *participate* in CTE versus those who complete enough CTE coursework to be considered “concentrators.” In the 2014-15 year, 15% of CTE participants were students with disabilities, whereas only 11.6% of CTE concentrators were from this group.

These data suggest that, although students with disabilities are just as likely to take a CTE course, they appear to be less likely to continue with additional CTE coursework and earn “concentrator” status.

¹⁹ Based on the State’s response to a 2015 Freedom of Information Law request submitted to NYSED and the data and documentation made publicly available online, AFC believes that the State does not currently track program-level CTE outcomes by student sub-group. However, at time of publication, we were unable to definitively confirm NYSED’s reporting requirements in this area.

FIGURE 2
Students with disabilities in CTE

Proportion of CTE concentrators in 2015 who were students with disabilities as compared to breakdown of overall cohort.



Source: New York State Education Department, 2014-15; Advocates for Children Analysis

These data suggest that, although students with disabilities are just as likely to *take* a CTE course, they appear to be less likely to *continue* with additional CTE coursework and earn “concentrator” status. Absent this discrepancy, we would have expected nearly 2,500 additional students with disabilities among CTE concentrators in 2015—and thus positioned to realize the full benefits of CTE. Given this missed opportunity, tracking attrition for CTE students with disabilities and identifying possible barriers that prevent them from continuing CTE coursework should be a priority for NYSED, as well as for BOCES and individual school districts.

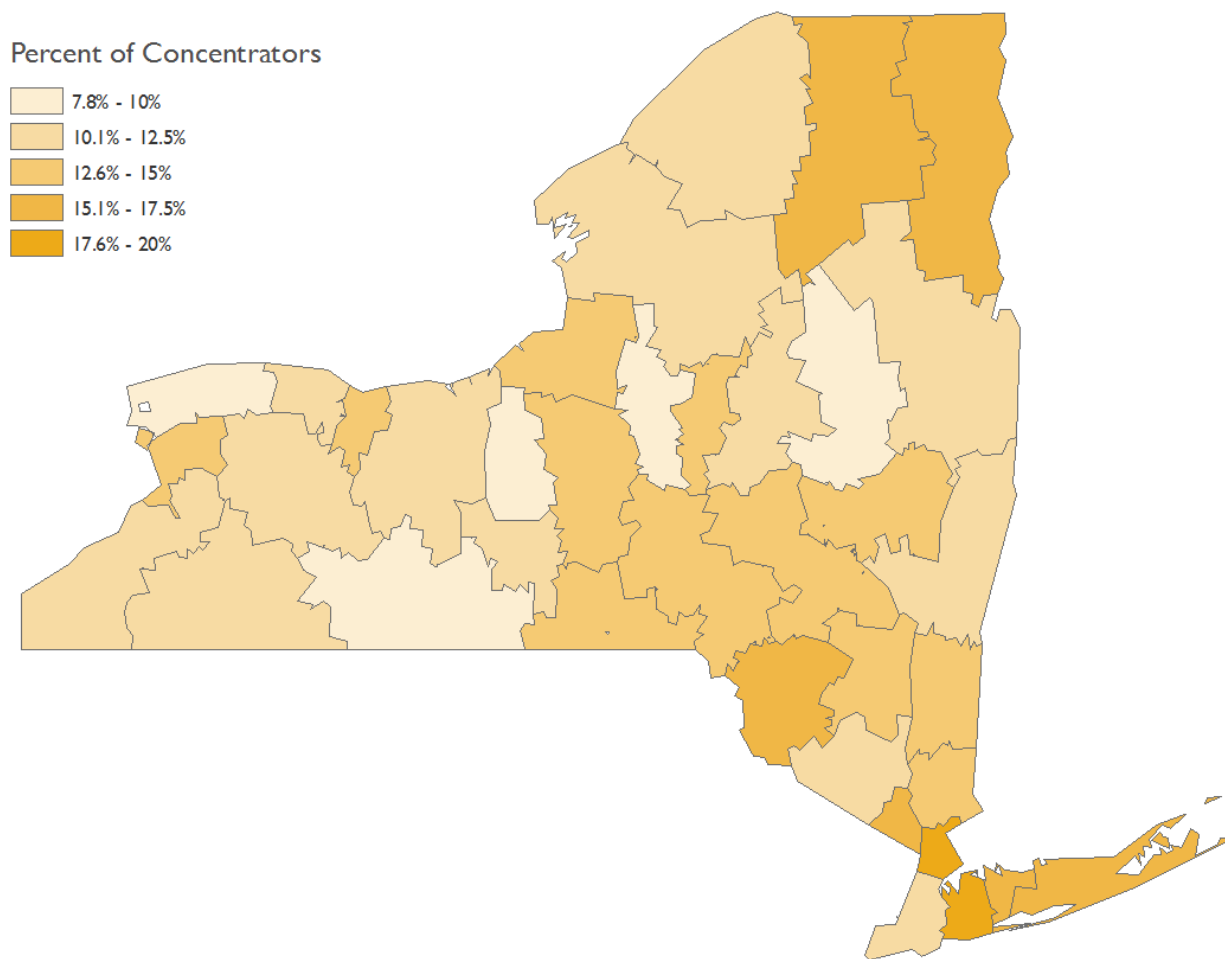
Variability in CTE Concentration across New York State

While looking at participant and concentrator rates in the aggregate gives us a useful, general sense of how the State is doing in terms of CTE access for students with disabilities, they can also mask disparities within the state.

The map in Figure 3 displays the percentage CTE concentrators reported for 2014-15 who were students with disabilities. These percentages varied considerably by geography, ranging from 7.8% in

the Hamilton-Fulton-Montgomery BOCES to about 20% in the Westchester BOCES. Generally speaking, central and downstate regions tend to have higher percentages of CTE concentrators who are students with disabilities. In contrast, BOCES regions in the northern and western parts of the state tend to have smaller percentages of concentrators who are students with disabilities.

FIGURE 3
Percent of CTE concentrators who are students with disabilities

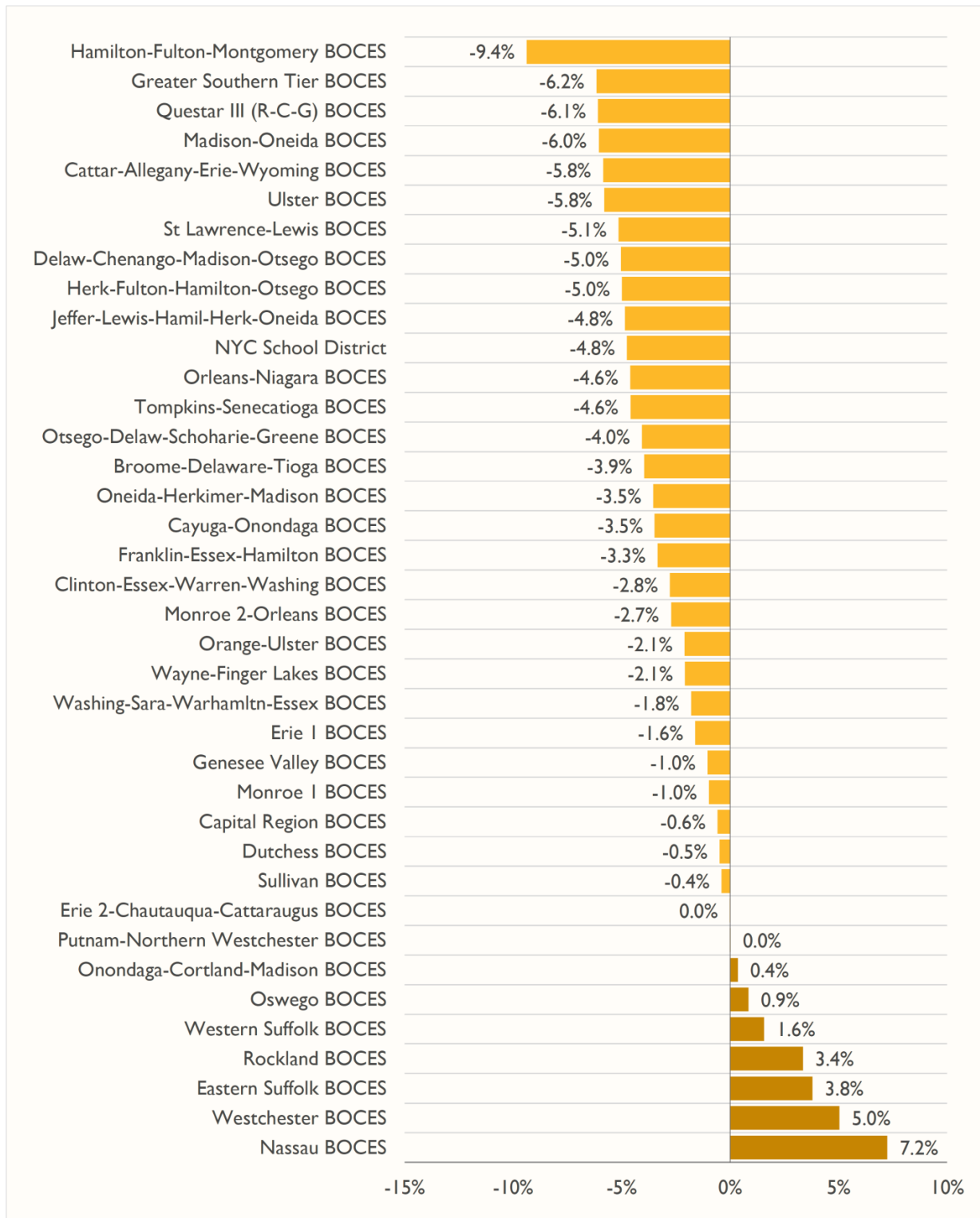


Source: New York State Education Department, 2014-15; Advocates for Children Analysis

Notably, while the *overall* percentage of students with disabilities in each BOCES region can vary considerably—from about 12% to 19%—this factor appears to have little effect on the percentage of CTE concentrators who are students with disabilities. For example, both the Hamilton-Fulton-Montgomery BOCES and the Sullivan BOCES have about the same overall percentage of students with disabilities—17.1% and 17.2%, respectively. But while roughly 17% of CTE concentrators in the Sullivan BOCES are students with disabilities, only about 8% in the Hamilton-Fulton-Montgomery BOCES are.

FIGURE 4
2014-15 Representation in CTE by BOCES

Over/under-representation of students with disabilities in CTE programs as compared to overall percentage in each BOCES region



Source: New York State Education Department, 2014-15; Advocates for Children analysis

Figure 4 shows the level at which students with disabilities are under- or over-represented among CTE concentrators across the state. In 2015, thirty of the 38 geographic regions examined²⁰—78.9%—had a lower share of CTE concentrators who are students with disabilities than would be expected given the overall enrollment breakdown by disability status in their component districts. Nine of these had an under-representation of students with disabilities by five percentage points or more. On the other end, only eight regions had an over-representation of students with disabilities among their CTE concentrators. For example, in the Nassau BOCES, the percentage of students with disabilities among CTE concentrators exceeded their share of the entire cohort by more than seven percentage points.

Although over-/under-representation of students with disabilities among concentrators is an important metric of accessibility, the capacity of each BOCES relative to the size of the student population in its respective component districts also determines how many students, in raw numbers, ultimately have access to CTE programs. In the 2011 cohort, there were over 62,000 total CTE concentrators across the state. Regardless of disability status, the “density” of the CTE concentrators varied considerably across BOCES geographic regions. While Figure 4 shows that students with disabilities were over-represented in the Nassau BOCES, these programs served a relatively small portion of overall students. Less than 6% of all students in the BOCES region were CTE concentrators, as opposed to the Madison-Oneida BOCES region, where over 65% of students were concentrators.

Given this geographic variability, one way to increase the number of students with disabilities in CTE is to expand programs in regions where there are relatively few CTE options currently available. This would require an investment of start-up funds as well as additional, ongoing funding for districts, whether to operate their own programs or “purchase” services from their BOCES. Encouragingly, the percentage of students with disabilities that access CTE closely tracks the overall percentage of students in CTE (see Figure 5). In other words, there is evidence to suggest that more students with disabilities will access CTE as more program seats become available. This strategy could prove especially worthwhile in those smaller BOCES that have established track records of serving students with disabilities through CTE.

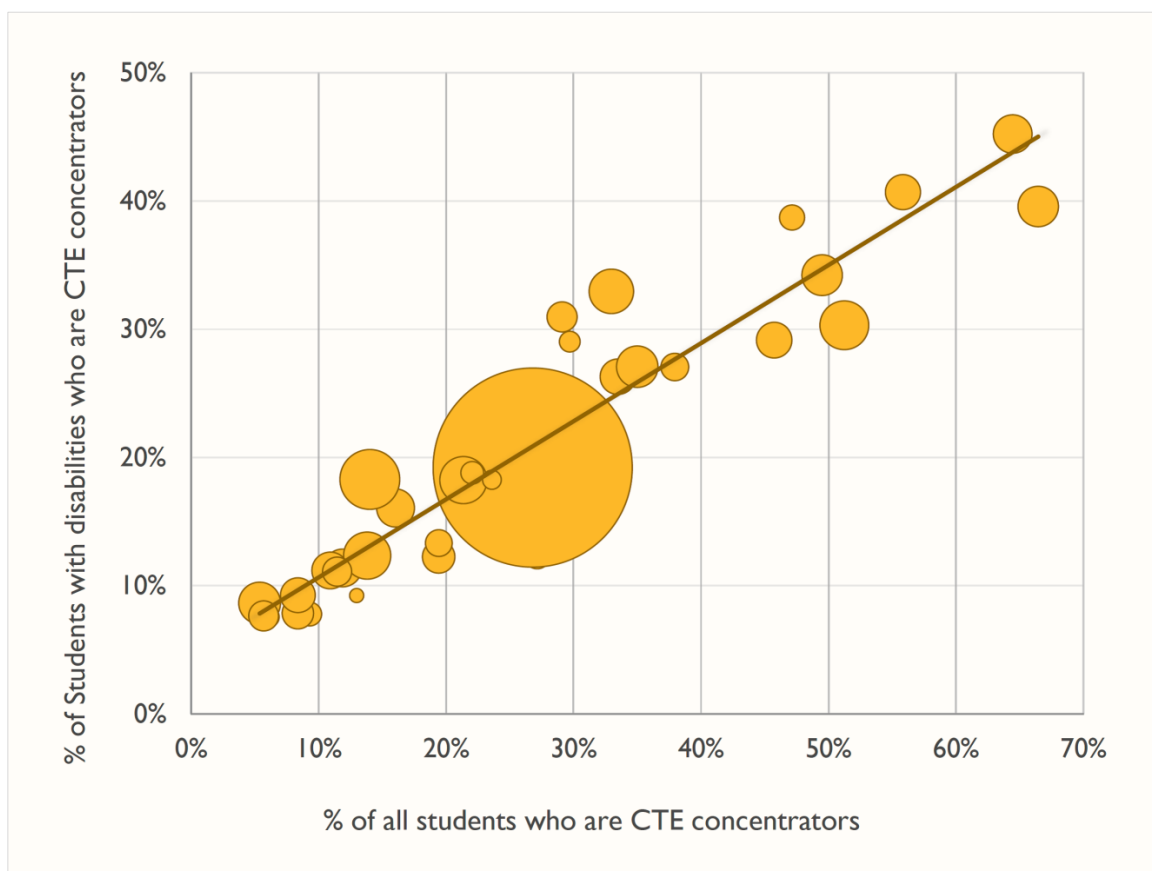
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²⁰ These include the 37 BOCES regions (each comprised of two or more school districts) and New York City.

BOCES that already have relatively large and well-utilized CTE programs should ensure that all students have equal access to their offerings, regardless of disability status. Participation and concentration rates for students with disabilities should, at minimum, approximate the overall percentage of students with disabilities in the region. These BOCES and their respective districts should look at differences in enrollment overall and among specific programs and seek to understand and address disparities where they exist. There may be a lack of comprehensive CTE teacher training to address the needs of students with disabilities, such as making appropriate accommodations and pedagogical modifications in the classroom and participating effectively in IEP reviews and transition planning. CTE facilities may not be equipped or have the necessary support staff to accommodate students with more physical needs, prompting schools to counsel students away from CTE programs out of safety or budgetary concerns (whether real or imagined). Due to any or all of these factors, students with disabilities themselves may not identify CTE as a viable option absent proactive recruitment and outreach efforts from schools and BOCES.

FIGURE 5
CTE Concentration among Students with Disabilities

Are programs that are utilized by a higher percentage of students overall also utilized more by students with disabilities?



Circle size corresponds to the number of CTE concentrators in the BOCES region.

Source: New York State Education Department, 2014-15; Advocates for Children analysis

Stakeholder Perspectives on Challenges to CTE Access for Students with Disabilities

The data in the previous sections document inequities in access to CTE programs for students with disabilities. The evidence suggests that the region in which a student attends school in New York not only affects whether CTE programming is available, but also whether or not access to those programs is associated with disability status. To understand how disability might impact access to CTE programs, Advocates for Children sought input from education advocates, families, and CTE professionals. Through interviews with these stakeholders, several themes emerged regarding the disparate access to CTE programs for students with disabilities.

All stakeholders noted that access to CTE programs for students with disabilities is, in part, affected by differences in abilities and challenges among this diverse group. Students with more significant challenges may experience greater difficulty accessing and succeeding in CTE programs. For example, some students may need additional support in adapting to a certain teaching style or a curriculum—support that could be provided through engagement strategies that accommodate diverse learning needs. In addition, some CTE classroom instructors may not be properly trained or resourced to supply the necessary support, which can lead to safety risks or other problems in the classroom.

Stakeholders, however, were quick to point out that students' disabilities are not be entirely responsible for these disparities in CTE access. Poor policies, lack of knowledge, and attitudes about disabilities also play a role. At the policy level, rigid assessment requirements make it difficult for students with disabilities to enter and graduate from CTE programs. Students with processing disorders, for example, traditionally struggle on English and math standardized assessments, which at times are used as prerequisites to enter CTE programs. Yet, because of their learning styles, these students might actually fit well into CTE classes were they given the chance to participate.

Graduation requirements may also pose an obstacle to CTE participation. New York State's burdensome exit exam requirements often oblige students with disabilities to prioritize passing their Regents exams, rather than devoting time to a CTE program, which can be as long as a half a day, five days a week. The exams themselves are also often not aligned with the context-driven curriculum that makes up the bulk of the coursework for a CTE student. For instance, a CTE student may be working on electrical wiring for an upcoming project at the same time as s/he is preparing for the multiple choice section of the U.S. History and Government Regents exam. Ultimately, students trying to fulfill these testing requirements while simultaneously pursuing CTE coursework may feel overwhelmed and forced to make decisions that may not be in their best long-term educational or career interests. Because more students with disabilities tend to struggle with passing the Regents exams—regardless of their mastery of the material—these students are more likely than their general education counterparts to forego CTE study as a result. Moreover, many schools restrict students from participating in CTE if they have not met Regents exam benchmarks.

Stakeholders interviewed also said that CTE programs often fail to offer curricula and instructional conditions that are required by students' IEPs. Although access to education programs is mandated under the federal Individuals with Disabilities Education Act (IDEA) and the Americans with Disabilities Act (ADA), many CTE programs fail to offer supports required by their students with disabilities. For example, many CTE classes in NYC are not offered in 15:1 student-to-instructor ratios or Integrated Co-Teaching (ICT)²¹ configurations—two common IEP requirements. So if a student requires a small class, two teachers, or a paraprofessional, many CTE classes would not technically serve as an appropriate placement for her/him. Furthermore, schools are not always willing or financially able to provide all the supports students might need to be successful in CTE programs. In fact, according to interviewees, numerous CTE centers have no special education teachers on-site at all. It is important to recognize that these issues impact students with disabilities in many different settings, including those in approved Chapter 853 and Article 81 schools.²²

Several interviewees also stated that CTE curricula tend to reflect industry standards, which themselves tend to make little, if any, allowances for students with disabilities. As a result, few CTE programs successfully adapt curricular content to meet the needs of students with disabilities. Moreover, the industry-recognized technical assessments—which students must pass to take advantage of the “4+1 option” or to earn a CTE diploma endorsement—seldom have well-developed guidelines for providing accommodations for students with disabilities.

According to interviewees, numerous CTE centers have no special education teachers on-site at all.

Access issues surrounding CTE programs for students with disabilities also suggest a lack of understanding of disability issues and prevailing attitudes concerning disability. While academic instructors and IEP team members²³ may comprehend the instructional, behavioral, and health needs of students with disabilities, CTE teachers and administrators often do not understand the wide variety of disabilities and what abilities students do and do not have. Stakeholders noted that many CTE staff are not versed in the variety of instructional techniques and behavioral support strategies that can help aid students with disabilities in the classroom. This lack of knowledge may lead CTE staff to assume that because a student has an IEP, s/he is not able to succeed. By the same token, it is likely that IEP teams lack sufficient knowledge about available CTE programs—its benefits or program requirements, for example—to determine whether it is an appropriate fit for a given student.

²¹ Classrooms that include both students with and without disabilities, taught by two teachers—a general education teacher and a teacher certified in special education instruction.

²² “853 Schools” are private, publically-funded nonprofit schools that operate under Chapter 853 of New York State Education Law and serve students with disabilities whose needs cannot be appropriately met through a district school or BOCES. Article 81 Schools are public schools generally serving children living in residential institutions, such as justice- or mental health-related facilities.

²³ A student’s IEP Team generally includes a parent or guardian, a special education teacher, a general education teacher, the school psychologist (or another expert that can interpret and explain evaluations), a district representative qualified to supervise special education. Other members can include the student herself, the school physician, service providers, or anyone else invited by the parent.

CASE STUDY • CTE Test Accessibility

Nathan²⁴ was interested in computer animation and was excited to enroll in a two-year CTE program offered through a district CTE high school. A major selling point was the opportunity earn a CTE endorsement on his high school diploma. Nathan hoped the endorsement—contingent on completing the coursework and passing a technical exam—would help him get into a college program in the field and would look good to future employers. Using the State’s so-called 4+1 option, he could also substitute a passing score on the CTE exam for one of the five Regents exams otherwise required to graduate.

When he reached the end of the program, however, the technical assessment proved a significant barrier.

Nathan has an IEP classification of Other Health Impaired and has been diagnosed with Pervasive Developmental Delay. On other tests, Nathan is often provided with a scribe—an adult who reads questions aloud and writes down his responses. But when Nathan’s mother, Kristine, asked about accommodations for the CTE exam, the school claimed the test did not allow for them. Kristine investigated on her own, discovering that the test did, in fact, permit accommodations. In response, the school offered an e-reader (a device that reads questions aloud). Nathan was not trained on using one for test-taking, so Kristine declined. The school rejected their request for a scribe.

Nathan ultimately took the test without accommodations, but came three points short of passing. Although he completed all his coursework, not passing the test meant Nathan would not receive a CTE diploma endorsement. “We were very disappointed,” said Kristine, adding that Nathan performed well on a major end-of-course project that included a presentation at a media industry show. “Nathan knew the content, but because he wasn’t provided appropriate accommodations, he didn’t have the opportunity to demonstrate what he could do.” For Nathan, the episode left him with lasting feelings of failure and self-doubt.

Nathan’s experience highlights the need for greater support for students with disabilities in CTE. While the consequences in Nathan’s case were significant, they could have been devastating—not passing the exam meant that he could not use the CTE test to meet his exit exam graduation requirements. Fortunately, Nathan was able to pass his other Regents exams and go on to graduate regardless. But for any student with a disability hoping to pursue the 4+1 option for CTE, accessibility issues such as these represent a serious roadblock to future college and career plans.

The focus of many new CTE programs on STEM-related career areas often creates incentives to cater to traditionally high-performing students. These programs often come with stringent admissions requirements that work to exclude students who could otherwise benefit from CTE. Indeed, stakeholders feared that the resurgence of interest in CTE could be accompanied by the purging of students with disabilities. Moreover, some stakeholders worried that districts and BOCES may be less inclined to develop or sustain non-tech-related CTE programs, which are sometimes a good fit for students with more severe disabilities.

²⁴ Name changed to protect student’s anonymity.

Conclusion and Recommendations

Comments from the stakeholders we interviewed underscored the many barriers for students with disabilities in accessing and successfully completing a CTE pathway. These challenges are especially important to acknowledge and address in light of the transformation of CTE that is currently underway. Emerging programs often come loaded with high expectations and boasting high-profile industry partnerships. As seats in these programs become increasingly coveted, students with disabilities may be less likely to gain access and/or more likely to be funneled into traditional vocational programs. But as a valuable education option—one which holds particular promise for students with disabilities—it is incumbent on State and local officials to ensure that all types of CTE programs remain accessible to all. Below are some initial steps that education officials can undertake towards ensuring access for students with disabilities and maximizing the positive impact of CTE programs for these students.

Increase access and make programs more flexible.

A. *Continue to expand the number of CTE assessment options that lead to a high school diploma.*

While the State has approved 29 assessments that students can use to meet the new 4+1 graduation requirements or receive a CTE endorsement, the list of exams does not encompass the entire array of CTE approved programs in the state. As a result, only a small percentage of CTE students are likely to be able to use their CTE experience to meet New York State's arduous testing requirements. NYSED should work with CTE educators and business leaders to identify assessments relevant to each career area and that align with CTE programs offered across the state.

B. *Ensure that current and new CTE assessments are adaptable and performance-based to the greatest extent possible.*

While the subject matter may be different, the format of existing approved technical assessments in many ways often resembles traditional standardized tests. Moreover, many fail to allow for testing accommodations for students with disabilities. This narrow approach to measuring proficiency should not preclude students with various learning challenges and abilities from completing CTE coursework and receiving the appropriate credential or license. First, NYSED should ensure that students with disabilities receive appropriate accommodations for all technical assessments currently in use or under review for potential

use. Second, NYSED should consider test formats outside of traditional standardized assessments. Given that CTE programs already incorporate hands-on learning as part of instruction and assessment, offering performance-based assessments in lieu of standardized assessments is both practical and appropriate. Absent the availability of appropriate, performance-based technical assessments in any given subject area, the State should create a mechanism for reviewing and approving—ideally with industry partner input—assessments developed at the local level.

C. *Work with industry partners to make CTE programs more adaptable to the needs of students with disabilities.*

Many CTE programs do not make their curriculum and classroom facilities accessible to students with disabilities. At the school level, CTE staff should collaborate with students' IEP teams and special education staff to best adapt CTE courses so that students can engage with the material and meet requirements to the greatest extent possible. At the state level, education officials and industry leaders should work together to ensure that CTE curricula and program sites address any safety concerns that arise from accessibility issues. The State should also consider promoting principles of universal design for learning—a pedagogic approach that emphasizes curricula designed to engage diverse abilities and learning styles—when developing or approving new programs or refining existing ones.

D. *Integrate multiple measures for consideration in admissions to CTE programs.*

Despite the growth of CTE programs across the state, there are still a limited number of seats available for interested students. This has led some programs to rely on standardized tests to manage entry. However, using standardized test results for CTE admissions places many students with disabilities at a disadvantage given their historical struggles with such exams. If CTE programs are looking to use admissions criteria to select students, schools should allow students to use performance-based measures such as grades or portfolios (essays, projects, etc.) in lieu of standardized tests scores.

Increase and target resources.

A. *Develop more CTE programs in underserved areas with a focus on programs accessible to the wide range of students with disabilities.*

CTE programs have become increasingly competitive due to an increased demand for CTE and a lack of available programs. For students who require more restrictive classroom settings, the State should encourage development of programs with appropriate supports to meet these students' interests and needs. Included in these should be more traditional CTE programs, which can especially benefit students with more severe challenges.

B. *Increase supports and related services for use in the CTE classroom or as part of CTE curriculum.*

To succeed in CTE, some students must have access to assistive technology and other accommodations in the classroom. Prioritizing CTE programs where students with disabilities

are underrepresented, the State should seek stakeholder feedback on supports and accommodations that can make these programs more accessible. On the school level, IEP teams should ensure that the CTE curriculum and special education services are integrated for students with disabilities in CTE programs (e.g., learning to hold tools properly in an occupational therapy session).

C. *Provide professional development opportunities for CTE and special education staff on teaching and assessing students with disabilities in CTE programs.*

Nearly everyone we spoke to noted the need for greater knowledge of issues related to special education among CTE staff. Specifically, districts and BOCES should train CTE staff on the IEP process as well as the diversity within the disability experience. Those we spoke to also acknowledged that special education staff needed more knowledge about working within the CTE space. In particular, it is important that special education staff be trained on the various CTE options and integrating CTE as part of a student's IEP and transition plan.

D. *Make access for students with disabilities a criterion for program approval by NYSED.*

Prioritizing new CTE programs that put forth comprehensive plans to recruit and serve students with disabilities would encourage BOCES and districts to focus on these issues and develop workable plans accordingly.

Increase data gathering and transparency.

A. *Gather and report data on CTE programs and students.*

Despite the growth of CTE opportunities across the state, there remains a dearth of comprehensive publically available data on the types of CTE programs that are available as well as the characteristics of students that are enrolled in them. Improved data collection by NYSED, including program specific participation and outcome data, would help identify what CTE programs are most effective, what districts are lagging behind in access for students with disabilities, and which students benefit the most from various CTE programs. Public data should include rates of *enrollment* and *participation* for students with disabilities and other student groups, not just concentrator data connected to graduation rates, which would aid in identifying completion and attrition rates in CTE.

B. *Monitor districts and CTE programs to ensure students with disabilities maintain equal access to CTE.*

As noted earlier in this report, there are considerable inequities in access to CTE programs across districts and BOCES. These gaps in access must be closed. Using more comprehensive data, the State could monitor and identify districts that are struggling to integrate students with disabilities in their CTE programs. Identifying problem areas will help ensure all districts and BOCES programs are doing all they can to provide equal access to equal CTE opportunities.

C. *Educate students/families on CTE programs/graduation options.*

Currently, there is no centralized resource for students and families to learn more about available and accessible CTE options. There is even less information about how CTE might fit into a student's IEP goals and completion of graduation requirements. NYSED should develop informational materials geared toward students and families. Materials should be made available online—potentially as part of NYSED's EngageNY initiative—and through printed materials for families with limited internet access. Materials should also be translated so that families who speak languages other than English are able to access information about CTE programs. Districts and BOCES should additionally develop and deploy outreach plans to raise awareness about CTE programs and their potential benefits for students with disabilities. School counselors and IEP team members should have access to and share CTE resources when helping families plan for the transition from middle school to high school, so that students' academic programs can accommodate a CTE program, if so desired.

D. *Create a statewide advisory group focused explicitly on student with disabilities and CTE programs.*

To help inform the future growth of CTE programs in New York State, NYSED should convene an advisory group comprised of CTE experts, educators, industry representatives, special education professionals, parents and, to the extent possible, current and/or past CTE students with disabilities. Given the diversity of CTE program areas and the range of needs among students with disabilities, an advisory group comprised of CTE stakeholders would be well-positioned to make practical recommendations to guide ongoing program development.



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