Increasing Equitable Access to Career and Technical Education

RESEARCH REPORT

February 2021

Learning that works for New Hampshire
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New Hampshire
Department of Education

CONTENTS

EXHIBITS

INTRODUCTION

RESEARCH PURPOSE

The New Hampshire Department of Education's (NH DOE) Bureau of Career Development (BCD) realized that students experienced inequitable access to career and technical education (CTE), with evidence suggesting that geographic location of high schools and CTE centers played a key role in driving inequitable access. To better understand the specific ways in which students experienced access inequities, and to identify potential strategies to address these barriers, NH DOE partnered with RMC Research (RMC) to identify barriers to equitable access to CTE and to determine potential strategies to address these barriers. NH DOE intends to use the information in this report as a starting point for discussions and partnerships with CTE leaders, educators, and other stakeholders to identify and implement a variety of strategies for increasing access locally and through statewide efforts.

PROJECT ADVISORS

New Hampshire's BCD director provided primary leadership for this project at the New Hampshire Department of Education. In close collaboration with the BCD director, RMC was advised throughout the project by members of the Equitable Access to CTE Task Force, an advisory group formed specifically for this work and composed of stakeholders with knowledge, expertise, and interest in CTE with insights into New Hampshire-specific contextual factors that relate to the emerging findings. RMC also interviewed 2 strategic advisors—individuals who provided contextual and historical knowledge of CTE and related education issues in New Hampshire. Additionally, RMC provided updates to and was advised by members of the committee known as SB190[1], a state legislative body focused on matters related to CTE.

RESEARCH QUESTIONS AND METHODS

Research questions and appropriately aligned research methods were determined in consultation with NH DOE.

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[1] The committee is named in relation to Senate Bill 190-FN of the 2015 New Hampshire state legislative session.

General Research Approach. RMC Research used a mixed-methods, exploratory and explanatory approach, collecting and analyzing data from multiple sources:

- Quantitative data on student participation in CTE provided by NH DOE.
- Qualitative data gathered through interviews, focus groups, and surveys of various stakeholders.
- Information on other state education agencies' approaches to delivering secondary CTE compiled through primary and secondary research.

Quantitative Analysis. Initial exploratory questions, aligned to RMC's quantitative data analysis, focused on examining enrollment patterns at NH's CTE centers. These descriptive inquiries provided a backdrop for landscape of CTE enrollment. Research questions included:

- **What percentage of eligible students attend CTE centers?**
- **How does attendance at CTE differ for students based on the location of their high schools relative to regional CTE centers?**
- **To what extent do enrollments at regional CTE centers represent the proportional enrollment of students at high schools from the area communities they serve?**

New Hampshire enrollment information was collected from publicly available state and federal data sources, or provided to RMC directly from NH DOE in the case of unpublished sets. Additionally, RMC gathered and analyzed national data on CTE enrollment from sources including the Perkins Collaborative Resource Network and the National Center for Education Statistics.

Qualitative Analysis. RMC's qualitative research provided insight through a more contextual and explanatory approach, and included semi-structured interviews and focus groups, formal and informal conversations with project advisors, and stakeholder surveys focused on 3 primary research questions.

- **What is currently working well with respect to CTE in New Hampshire?**
- **What are the major barriers driving inequitable access to CTE?**
- **What potential strategies could mitigate these barriers and increase equitable access?**

Qualitative data was analyzed using an open coding process. More details on RMC's qualitative data collection process, including identification of specific stakeholder constituencies and an illustration of findings by stakeholder affiliation are available in Appendix A. Interview and focus group protocols and survey instruments are available in Appendix B.

Process Modifications. Initially, RMC's project plan included conducting site visits to several CTE centers and high schools, in order to gather qualitative data through interviews and focus groups on-site with leaders, educators, students and other key stakeholders. Given the onset of COVID-19 in March 2020, data collection shifted to a remote process, with most conversations taking place online via Zoom or by phone. RMC also used SurveyMonkey to collect information from stakeholders.

FINDINGS AND RECOMMENDATIONS

THE EQUITABLE ACCESS CHALLENGE

This section presents findings related to CTE enrollment patterns based on RMC's analysis of enrollment data provided by NH DOE. In 2018–2019 a total of 9,428 New Hampshire students in Grades 11 and 12 attended programs at CTE centers—about 35% of all students eligible to attend CTE centers statewide.[2]

Career and technical education (CTE) at the secondary level in the state of New Hampshire is primarily delivered through 28[3] regional CTE centers. Regions generally include 2 to 9 high schools from area school districts, with the CTE center located on the campus of one 'host' high school. Students attending the host high school and high schools in the surrounding communities (referred to as 'sending schools') are eligible to attend programs at the CTE centers.

All New Hampshire students are eligible to attend a CTE center upon entering Grade 10. However, analysis of enrollment data shows that students who attend host high schools are far more likely to attend CTE centers than their peers at sending schools. Of the students attending CTE centers that serve multiple high schools,[4] 71% are enrolled the host high school, whereas the remaining 29% travel to the centers from the region's sending high schools.
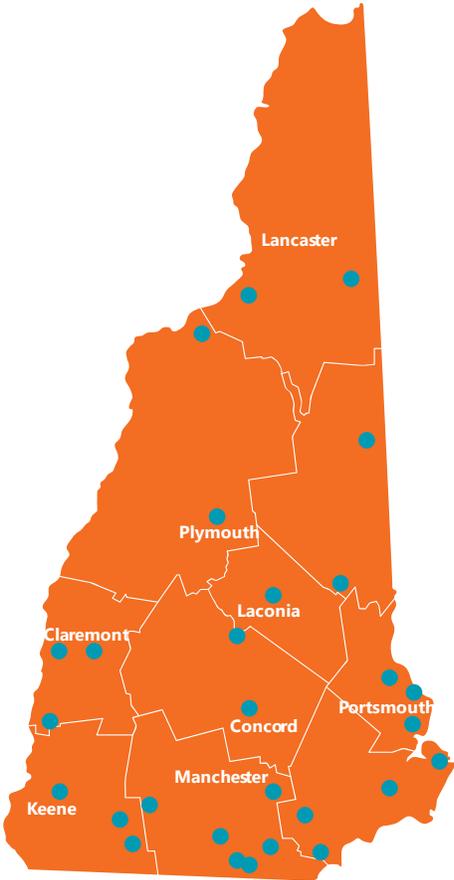
Exhibit 1
Most CTE centers in New Hampshire serve students at their host high school and students from other schools in the region.

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[2]For additional data on NH, national, and other state CTE enrollment, see Appendix C.
[3]Students residing in communities closely bordering Vermont are eligible to attend one of 5 Vermont-based regional CTE centers.
[4]Two CTE centers (Portsmouth Career Technical Center and Mt. Washington Valley Career Technical Center) serve only a single school (no sending schools). Plymouth Applied Technology Center serves a very small number of sending school students.

Exhibit 2
Statewide, New Hampshire students from host schools are more likely to enroll in CTE centers than students from sending schools.[5]
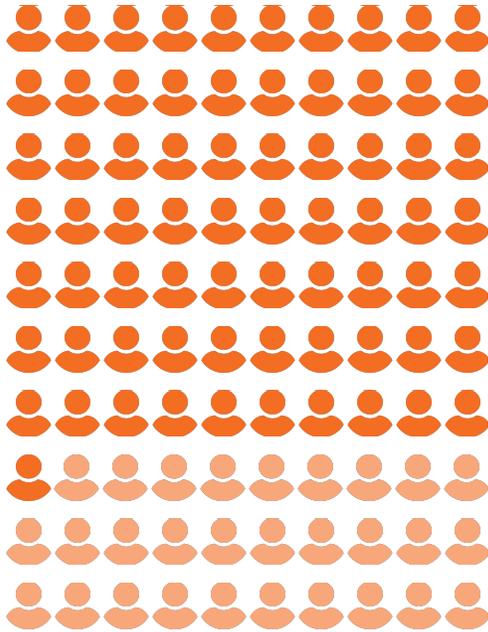
71% (6,301)
of students enrolled in NH CTE centers attended host schools

29% (2,579)
attended sending schools

Disparities in enrollment based on students' home high schools are evident statewide and also at the center level. Although CTE centers are intended to serve all students in their region and allot seats in proportion to the enrollment of students attending all of region's participating high schools, most CTE centers primarily serve students at the host high schools. For example, New Hampshire students residing in 1 of 7 school districts in Region 9 can attend the Huot CTE Center located in Laconia. As Exhibit 3 shows, the Huot Center's enrollment is not proportional to enrollment in each Region 9 community. Similar patterns are evident in most of New Hampshire; see also the comparison of the Dover Center's enrollment to Region 6 enrollment. (See Appendix D for additional proportional enrollment exhibits.)

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[5]2018–2019 data received from New Hampshire Department of Education.

Exhibit 3
**The proportion of students from host schools enrolled at CTE centers
is often greater than their proportional enrollment in the region.**

Region 9 (7 schools)

19%	Laconia (host school)
14%	Belmont
10%	Franklin
17%	Gilford
11%	Interlakes
13%	Newfound
15%	Winnisquam

Huot CTE Center (serves Region 9)

48%	Laconia
12%	Belmont
5%	Franklin
17%	Gilford
7%	Interlakes
	Newfound 1%
10%	Winnisquam

Region 9 (4 schools)

46%	Kingswood (host school)
16%	Farmington
10%	Moultonborough
28%	Prospect Mountain

Lakes Region Center (serves Region 9)

80%	Kingswood
5%	Farmington
6%	Moultonborough
10%	Prospect Mountain

The Meaning of *Equitable Access* to CTE in New Hampshire

New Hampshire faces a common concern among forward-thinking states in trying to provide all secondary students with opportunities to participate in high-quality CTE. States and local communities seeking to expand access to CTE are often challenged by both structural equity barriers (e.g., course scheduling, credit requirements, transportation) and social equity barriers (e.g., stigma against CTE participation, racial and gender biases, and actual or perceived student limitations due to disability or English learner status).

In speaking with New Hampshire stakeholders and examining enrollment data, the evaluation found that **the primary factor impacting students' participation in CTE was whether they attended a host or sending high school within their region**, rather than factors such as gender, race, ethnicity, socio-economic status, special education status, or English learner status.

However, analyses of national data[6] show that students face disparities in CTE access based on race and other demographic attributes. Likewise, RMC Research's analysis of New Hampshire's CTE center enrollment data indicates some disparities in student attendance based on gender, race and limited English proficient status (see Appendix E). Additionally, some stakeholders reported specific incidences of students experiencing CTE access barriers based on their English language proficiency or disability status.

Accordingly, although attending a host school rather than a sending school appears to be the single greatest issue impacting overall CTE participation, the evaluator recommends that ongoing analyses of New Hampshire's CTE participation data include probing for indicators of inequity among student subgroups, and that implementation of initiatives to increase access include measures to address specific equity needs beyond geographic access.

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[6]https://www.americanprogress.org/issues/education-k-12/news/2019/08/28/473876/advancing-racial-equity-career-technical-education-enrollment/
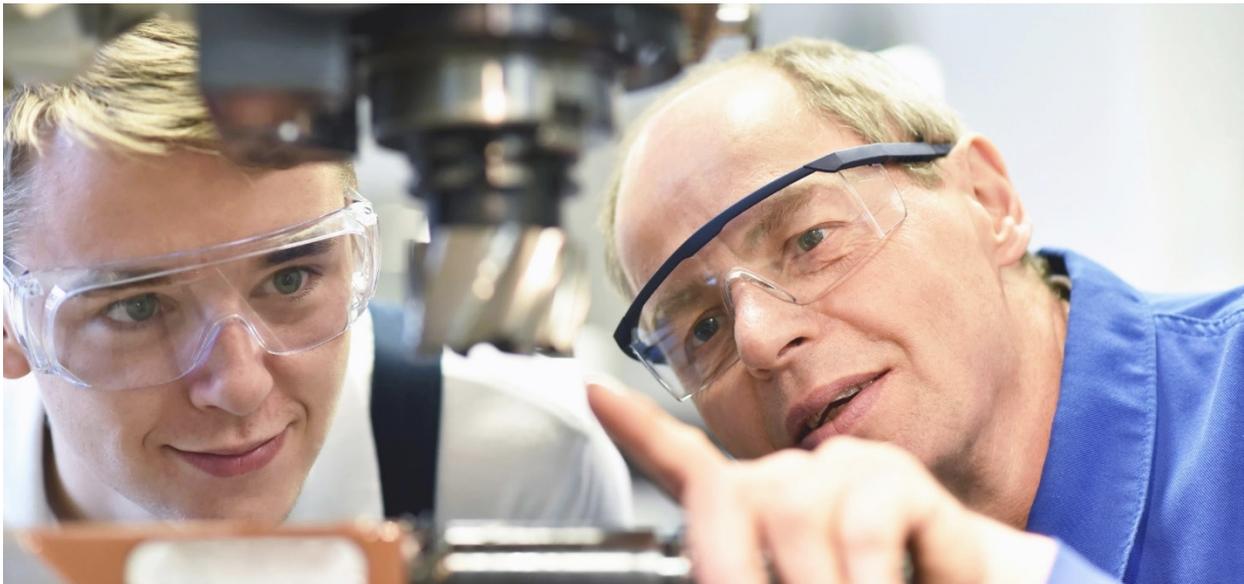
WHAT IS WORKING WELL IN CTE IN NEW HAMPSHIRE?

Stakeholders described many positive aspects of CTE in New Hampshire.

- **High-Quality Programs.** On the whole, stakeholders reported that New Hampshire's secondary CTE programs are rigorous; well designed; and taught by caring, committed and skilled faculty.

- **Preparing Students for College and Career.** When describing the value of CTE, stakeholders noted that CTE courses help students prepare for both college and career. The courses place learning into "real world," "relevant," and "directly applicable" contexts, and in many cases help students earn college credit and industry-recognized credentials.

- **A Sense of Community.** In addition to preparing students for their academic and professional futures, stakeholders valued CTE for its broad and diverse program offerings. As one CTE leader stated, "There is something for everyone," and the programs give students a chance to connect with peers who share their particular interests.

- **Discovering CTE.** When reflecting on practices that effectively help students learn about CTE, many stakeholders pointed to the essential role of hands-on, experiential activities such as CTE summer camps. Additionally, current CTE student make effective ambassadors to their peers.

- **Relationships Matter.** Stakeholders generally agreed that strong relationships between centers, host and sending schools and districts is essential to supporting the best outcomes for students—especially when barriers to CTE attendance arise. The role of school counselors is deemed particularly important in this regard because their relationships with both the CTE centers and the students they support are key factors in helping students understand and access CTE.

WHAT ARE THE BARRIERS TO EQUITABLE ACCESS?

Stakeholders identified a wide array of barriers to students attending CTE centers.[7] Closely related issues are clustered together into 4 main types: systems barriers, information and understanding barriers, academic equity barriers, and enrollment barriers. Stakeholders often described contextual overlap across the themes, which are noted as appropriate.

Barrier Type 1: Systems

Stakeholders frequently identified 4 distinct but closely interrelated systems barriers as major roadblocks for students wishing to attend CTE centers—especially for students enrolled at sending schools.

Scheduling. Attending a CTE center can be a challenge for students when programs scheduled at the CTE center conflict with their school's schedule. For example, students might forgo participating in a CTE program they are interested in because of a scheduling conflict with an essential or desired academic course or nonacademic activity. Students attending both host and sending schools might experience these kinds of scheduling challenges.

Calendar Misalignment. Stakeholders reported that although regional school district and CTE leaders meet annually to discuss calendar alignment between schools and CTE centers, as required by New Hampshire regulations, misalignments persist and cause scheduling challenges for students. Host schools, sending schools, and CTE centers–even those within the same CTE region–might have varying daily bell schedules, school year start and end dates, snow closure days, and educator professional development days. These misalignments are most challenging for students attending sending schools.

Transportation. Students attending host schools, where a regional CTE center is collocated on campus or embedded within the main school building, are more easily able to access CTE courses than their peers who attend sending schools. In contrast, sending school students are transported daily from their school to the CTE center and back again, which results in a significant loss in instructional time.

Funding. Budgeting for the costs of student transportation and CTE center tuition was often mentioned as a concern by school, district, and CTE center leaders. Although nearly all school and district leaders interviewed reported that no students were denied access to CTE due to a lack of funding, stakeholders generally agreed that the cost of student transportation and tuition are factors in local budgets and can be a challenge in some cases.

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[7]See Appendix A for more information about stakeholder comments about barriers.

Barrier Type 2: Information and Understanding

Stigma. Stakeholders widely cited that negative perceptions about CTE creates a barrier for many students. In particular, stakeholders often remarked that adult influencers—such as parents, teachers, and school counselors—can directly or indirectly discourage students from attending CTE programs. Such adult perceptions of CTE may be rooted in outdated ideas about the nature of CTE—for example, that CTE is incompatible with aspirations to attend college. Some stakeholders reported that students may be concerned that colleges will view CTE courses as unfavorable. However, stakeholders reflected that stigma against CTE may also be introduced and reinforced by school or district policies with regard to weighting CTE course credit.

Lack of Knowledge. Many stakeholders noted that students, their adult influencers, and even community leaders such as school board members lack knowledge about CTE generally and about the specific programs available in their high schools' regions. In some cases, lack of knowledge may exacerbate CTE stigma. For example, parents or other adult influencers who have not visited modern CTE classrooms might incorrectly imagine them resembling antiquated vocational programs. In other cases, lack of knowledge serves as a barrier because students or their adult influences are not aware of the CTE programs that might have interested them.

Barrier Type 3: Academic Equity

Course Credit Weighting. For students concerned with maintaining a high-weighted GPA, school or district policies about the relative weight of CTE courses can be a barrier. Several stakeholders noted that honors level or Advanced Placement courses taken at a student's high school are weighted more heavily than CTE courses—even though CTE courses generally bear college credit. Stakeholders often remarked that although such policies might not pose a barrier as challenging as scheduling and transportation issues, they are particularly concerning from an equity lens. That is, discrepant course credit weighting policies can reinforce stigma against CTE programs, insinuating that CTE courses are worth less than other course options.

Local Eligibility Policies. New Hampshire law states that any student in Grades 10, 11 or 12 may attend a CTE center. However, stakeholders reported that some sending schools have local policies regarding eligibility to attend the CTE center based on factors such as behavior record, GPA, English learner status, and grade level.

Graduation Requirements. Stakeholders shared that local school and district policies regarding the number of credits and specific courses required to graduate can create barriers to attending CTE centers. Furthermore, such policies often intersect with scheduling and transportation barriers. For example, a student planning to attend a CTE program in the latter part of their high school career might find that doing so conflicts with their remaining opportunities to take a required course or earn a certain number of academic content credits needed to graduate.

Barrier Type 4: Enrollment

Application Process. Many CTE centers require interested students from sending schools to apply for admission. Some stakeholders reported that the application process alone can present an access barrier—especially if the student does not have support navigating the application process. Overall, though, stakeholders expressed concerns about the inequity of requiring only sending school students—and not host school students—to apply. Some stakeholders also worried that host school students' ability to enroll directly exacerbates CTE stigma because it might create the impression among host students that they are not equal participants in the CTE program.

Program Availability. At many CTE centers, popular programs are consistently enrolled at capacity, resulting in some interested students being unable to attend.

WHICH STRATEGIES COULD INCREASE EQUITABLE CTE ACCESS IN NEW HAMPSHIRE?

New Hampshire recognizes that all districts and CTE regions have unique contexts, assets, and challenges. The evaluation findings suggest that New Hampshire students would be best served by a substantial menu of options that CTE regions, districts, schools, and NH DOE could consider implementing in response to local capacity and needs. **The proposed strategies presented in this section of the report include are based on discussions with a diverse set of stakeholders in New Hampshire and RMC's research on CTE delivery in other states.**[8]

Members of the Equitable Access to CTE Task Force engaged in an analysis of the extent to which various strategies would be most actionable and most impactful. **Some strategies emerged from the Task Force's analysis and further discussions as priorities for consideration.** Many barriers to equitable CTE access are interrelated (e.g., scheduling and transportation) and are further influenced by local context; accordingly, some of the proposed strategies could address more than one equitable access barrier and could be implemented in a customized manner to serve students' needs in each region, district, or school context. What works well in one district or region might not be the right choice for others.

Additionally, we recognize that there would be variation in who is best positioned to lead and support the implementation of various strategies. In some cases, the suggested strategies could be implemented locally by individual schools, districts or communities, whereas others would require leadership from NH DOE, in partnership with stakeholders. For each strategy, the research team identified suggested **leaders**—stakeholder groups who would be best positioned to drive implementation and **support**—stakeholder groups who would collaborate with the leaders and provide recommendations and implementation assistance.

Just as the barriers to equitable access to CTE often intersect and overlap strategies to address those barriers may also intersect and address more than one challenge. Additionally, many of the substrategies or action items recommended for how to operationalize the strategy may occur simultaneously. The research team recommends that NH DOE, in collaboration with and with support from stakeholders, will identify several strategies that can be implemented at the state level—and supported at the local level—to address barriers on multiple fronts.

Next Steps. The research team and NH DOE recognize that the proposed strategies discussed here are not exhaustive. RMC's conversations with stakeholders yielded many suggestions and ideas, not all of which can be discussed in detail in this report. State, district, and CTE leaders—along with other stakeholders—are encouraged to use this section as a starting point for considering which actions could enhance equitable access to CTE in their communities and contexts.

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[8]Additional details on strategies proposed by stakeholders—including some proposed strategies not discussed in detail in this section—are available in Appendix A.

Priority Strategies

- Improve regional calendar and schedule alignment.
- Execute a statewide campaign to rebrand and promote CTE.
- Expand CTE programs in local high schools.
- Increase CTE exploratory opportunities in middle grades.
- Develop a statewide hybrid CTE academy.

Additional Strategies

- Pilot an academic and CTE inclusive high school.
- Consider alternative CTE center enrollment schedules.
- Revise course weighting policies.
- Expand opportunities for embedded academic credit in CTE courses.
- Align program offerings with student demand and workforce needs.
- Consider revising application and enrollment policies.

Priority Strategy

▶ Improve regional calendar and schedule alignment

LEADERS   School Boards, District Leaders

SUPPORT   School Leaders, NH DOE

Background. Stakeholders reported that although regional school district and CTE leaders meet annually to discuss calendar alignment between schools and CTE centers, as required by New Hampshire regulations, misalignments persist and cause scheduling challenges for students. Host schools, sending schools, and CTE centers–even those within the same CTE region–might have varying daily bell schedules, school year start and end dates, snow closure days, and educator professional development days. These misalignments can make attendance at the centers difficult for all students, but particularly so for students from sending schools, who must travel to the centers.

Misalignments persist for numerous reasons. According to several CTE directors, regional meetings are most often not attended by superintendents and school boards, who have the ultimate decision making authority about local calendars (though this is not always the case). Therefore the group—often composed mostly of CTE directors and school leaders—might come to an agreement about alignment, but not implement it. Stakeholders, including superintendents and school board members, report that the primary reason for this is that

superintendents and school boards do not fully understand the potential impact of misalignment on students.

Likewise, many stakeholders—including counselors, teachers, and CTE directors—reported that the full impact of calendar and schedule misalignment may be not be evident to school and district leaders, because educators and others who provide direct student support often exert significant efforts to ensure that students can still attend CTE. For example, counselors and CTE teachers often provide extra support for students from sending schools who miss whole days due to calendar misalignment, or who regularly come into class late and/or leave early every day due to daily schedule misalignments.

Others reported that because superintendents and school boards might feel their duty is primarily to their local district, the calendar should best serve their local needs, regardless of impact on other districts in the region and the district's own CTE students, who are often a relatively small minority relative to all students in the district.

Strategies. School boards, regional district and school leaders, CTE center leaders, and NH DOE leaders could develop an action plan for improving the process for aligning school and CTE center calendars. Stakeholders suggested a number of possible strategies, many of which could be pursued simultaneously:

- **Consider adopting lessons learned in Maine**, where regional schedules driven by alignment with CTE centers.

- **Revise legislative language to better define expectations** for how school leaders, district leaders, CTE directors, and school boards engage in the regional calendar and schedule alignment process, and what the outcomes should be.

- **Support districts that are willing to work together** to align as many districts in the region as possible. For example, if a host district and the district which sends the largest number of schools are able to come to agreement, this would at least provide greater access to a segment of students.

- Working with New Hampshire superintendents' association and school board association, **conduct a targeted professional learning campaign** to share the extent and impact of the problem, and engage supportive school boards and district leaders in advocating for improvements.

- **Highlight districts and CTEs whose calendars and schedules are well aligned** and show how those involved addressed the challenges and solved the problems. Several stakeholders suggested the Seacoast School of Technology as a possible model.

- **Make student self-transport more accessible.** Several stakeholders remarked that allowing students who can to drive themselves to and from CTE centers has helped increase access, because students do not have to rely on a fixed bus schedule, or face the uncertainty of receiving bus transportation if they are the only student wishing to attend a certain center or class. However, expanding this strategy would mean streamlining bureaucratic hurdles that can also make it challenging for students to have permission to self-transport, and ensuring sufficient parking.

- **Learn from successes experienced during COVID-19.** Stakeholders reported that in some cases hybrid and asynchronous learning strategies have proved more successful than anticipated, and continuing with this model might support more flexible scheduling and increased student access to CTE.

Priority Strategy

▶ **Execute a statewide campaign to rebrand and promote CTE**

LEADERS CTE Directors Association

SUPPORT School Board Association, Counselors Association, NH DOE

Background. Stakeholders frequently reported that lack of knowledge about CTE in general and about the CTE centers, along with stigma about CTE (often stemming from or intersecting with lack of knowledge) creates barriers to students accessing CTE. Some examples of how this operates include the following:

A student attending a CTE center from a host school reported that she only knew about the CTE center because she attended day care there as a child. She could not recall anyone from her home sending high school telling her about the center.

Counselors reported that other counselors, parents, students, and higher education officials often believed (or were perceived to believe) that CTE courses would not be as valuable in the college application process as other academic courses.

Industry representatives and CTE directors reported that stigma about certain professions (such as agriculture, construction and other trades) are perceived as undesirable and suitable only for students with limited academic ambitions.

School board members reported that some of their fellow members did not know that their district had a CTE center, or had never been to see it.

Strategies. A statewide campaign to share accurate information about CTE in New Hampshire could address access barriers stemming from lack of knowledge and negative perceptions of CTE. While some elements of this strategy could take the form of a traditional media campaign, (e.g., social media, television commercials), stakeholders often suggested that such an effort should include presentations and other targeted educational opportunities to show key constituent groups how they could support better access to CTE.

Stakeholders recommended numerous possible strategies, many of which could be pursued simultaneously:

- **Engage a planning team composed of a wide variety of stakeholders to collaboratively design and disseminate key messages**—including individuals readily identifiable as likely advocates for CTE (e.g., current CTE students, educators, and program administrators) and others with distinct perspectives such as program graduates, school counselors, postsecondary education representatives, and school board members.

- **Learn from the New York State Department of Education**, which successfully implemented such an effort that could serve as a possible model.

- **Leverage New Hampshire's newly implemented requirement for all incoming Grade 9 students to complete a career assessment** and discuss related course and career-ready credential options with their counselors as key lever for ensuring that all students receive information about CTE programs aligned to their interests.

- **Execute a professionally prepared marketing campaign** including traditional and new media (television commercials, print ads, social media), with a consistent set of messages focused on the value of CTE, outcomes for students, and statewide opportunities. Although some artifacts may be customized for individual centers, the emphasis could be on CTE as a whole. The Community College System of New Hampshire's College in the 603 campaign may serve as a model.

  - Engage CTE alumni in telling their story. Featuring successful graduates at various stages in their post- high school career can illustrate to students, parents, and counselors the array of pathways that CTE graduates may follow.

- **Design and implement professional learning campaigns focused on the key constituent groups** school counselors and school board members.

  School Counselors

  - Make information about CTE more readily available especially to counselors.

  - Bring counselors into CTE classrooms to engage in instructional rounds.

  - Make career counseling a required component of counselor education.

  School Board Members

  - Work with the New Hampshire School Board association and local CTE leaders, school and district leaders, ensure that all school board members understand the value of CTE and the barriers their students face—particularly with respect to transportation and schedule and calendar misalignment.

  - Ensure that all school board members visit CTE centers. Although an after-school tour is beneficial, opportunities for during-school visits that include a structured classroom observation could help school board members understand the rigor and quality of the instruction taking place.

▶ **Expand CTE programs in local high schools**

LEADERS District Leaders, School Boards

SUPPORT School Leaders, CTE Directors, NH DOE

Background. Several high schools in New Hampshire currently offer career-focused programs, although they vary in the extent to which they represent a programmatic sequence of courses and generally do not receive Perkins funds. Having access to these courses right at their own high school eases access for students. However, offering high-quality CTE programs comparable to those at a CTE center can be difficult for some high schools and would not be a viable solution for all districts statewide. Programs requiring specialized and costly laboratory equipment, such as automotive technology, health sciences, and culinary studies, are generally not be well suited as offerings in most high schools. Additionally, some stakeholders (particularly CTE directors) expressed concern that courses offered at local high schools may not offer the same instructional rigor or alignment to industry standards as found in CTE centers. Still, across the United States CTE programs are commonly offered in local high schools. And as evidenced by lessons learned through remote and hybrid learning during COVID-19, many programs can be effectively provided without daily access to a formal CTE center.

Strategies

- **NH DOE could provide support for schools interested in formalizing their career-focused courses** or adding such courses to their offerings through technical assistance and sharing of best practices learned by CTE centers and schools which do offer these programs.

- **NH DOE could facilitate partnerships between CTE centers and high schools**, in which the CTE center provides guidance and support for high schools in setting up programs and identify instructors with appropriate industry and pedagogical knowledge. In such cases, the programs offered at local high schools might be framed as 'satellite' locations of the regional CTE center.

- **Consider lessons that can be learned from other states.** In Delaware CTE teachers work in various locations, including local high schools, but officially report to the state department of education. In South Dakota CTE teachers working at local high schools report to the regional CTE director. In New Jersey CTE teachers in some programs and locations rotate across various schools, in order to provide CTE instruction in parts of the state with limited geographical access.

- Through its program approval process, NH DOE is positioned to **ensure that schools and nearby CTE centers offer a complimentary menu of programs that do not duplicate offerings** unless there is a need for additional seats in a high-demand program.

▶ Increase CTE exploratory opportunities in middle grades

LEADERS   **District Leaders, Middle School Leaders, Middle School Counselors**

SUPPORT   **CTE Directors, NH DOE**

Background. Attending a regional CTE center, especially for students from sending schools, requires advanced planning to identify programs, apply for admission, and complete required courses at their own school. However, many stakeholders noted that many students and parents first learn about CTE centers in Grade 9, often though a presentation made by a CTE administrator, or through conversations with their school counselor. Stakeholders reported that for some students and parents, this is not enough time in advance to fully learn about CTE options and plan for attending the center during Grades 10–12. Instead, many stakeholders believed that increasing opportunities to learn about CTE in the middle grades was an important strategy for improving equitable access.

Strategies. Although stakeholders shared various ideas for exposing middle school students to information about CTE, students interviewed for this study shared that visiting the CTE center in person was a key factor in their decision to ultimately enroll. Accordingly, providing more students with hands-on exploratory opportunities at the CTE center during the middle grades seems likely to support their making a more informed decision making about accessing CTE in high school. Stakeholders made multiple suggestions, many of which could be implemented simultaneously:

- **Support schools in creating tools and professional learning opportunities for educators to provide for early career planning** with students that feature opportunities along a continuum for career pathways, and which show how courses available in middle school are aligned to career-focused courses and programs in high school and/or at CTE centers. For example, educators could more explicitly connect existing middle school programs, such as technology and family and consumer sciences, with CTE pathways.

- **Support middle school educators and counselors to leverage SB276**, New Hampshire's recent legislation that requires incoming high school freshmen to take a career assessment. In addition to administering a career assessment, middle school educators and counselors can help students see how their career interests could be explored through CTE opportunities offered in their region(s).

- **Expand out-of-school opportunities for middle school-aged students and their parents to learn about career opportunities.** Many CTE centers report that summer camps are a popular and effective way to help students get hands on experience with their programs.

- **Support high schools and middle schools in partnering to create a program and schedule for middle school students to visit CTE centers.** Although tours are one way for younger students to see the centers, a more robust program of hands-on exploratory encompassing multiple CTE areas would be ideal.

- **Engage high school CTE students as ambassadors to middle school students** through presentations at middle schools and during visits to the CTE centers.

- **Build awareness among parents of middle schoolers about CTE centers and opportunities**, including parents of home schooled students.

- **Learn from schools and districts that have successfully begun implementing relevant practices.** For example, some middle schools in Manchester Public Schools include a CTE construction experience as part of their industrial arts curriculum.

Priority Strategy

▶ **Develop a statewide hybrid CTE academy**

LEADERS   NH DOE

SUPPORT   CTE Centers Association

Consider New Hampshire's Virtual Learning Academy Charter School (VLACS) as a model for a hybrid CTE academy composed of lecture components that students could complete online and laboratory components that students could complete at nearby partner organizations or CTE centers. Additionally, valuable lessons can be gleaned from the hybrid online and in-person approach to CTE instruction being implemented during the 2020–2021 due to the COVID-19 pandemic.

▶ Pilot an academic and CTE inclusive high school

LEADERS District Leaders, School Board

SUPPORT NH DOE

Background. Because most students in New Hampshire attend sending schools and must travel to CTE centers, calendar misalignment, scheduling, and time spent on transportation pose significant access challenges. Stakeholders report that even students who attending host high schools sometimes find it difficult to fit a desired CTE program into their schedule.

One strategy to address this issue is to pilot implement a fully integrated academic and CTE high school—much like the model of CTE delivery widely used in Massachusetts, where about half of the students participating in CTE programs students do so by attending one of several regionally located academic and CTE inclusive high schools. (Other students attend CTE offered at their local high schools, or at regional educational collaboratives.) This model allows students to attend their CTE and other subject classes, receive support services, and have nonacademic experiences (e.g., sports and clubs) in a single location for all 4 years of high school. The first semester of Grade 9 is designated as "exploratory," whereby all freshmen rotate through each CTE program the school offers before electing a pathway to follow.

Currently, a similar model exists in New Hampshire at the Manchester School of Technology, a regional CTE center that serves area districts and also houses a school-within-a-school where students attend the center full time, receiving both their academic and CTE courses in a single location.

Strategies. Stakeholders recommended a number of steps and strategies that NH DOE and a local community could take toward exploring and potentially implementing this model.

- **Identify a community where there is interest and community support for this model**. Provide technical assistance to build additional will and buy in from local stakeholders, including school board members, regional school and district leaders, students and parents.

- **Provide technical assistance and funding to fully develop the program**, including facilitating conversations and studies of best practices from schools like MST and CTE high schools in Massachusetts.

- **Provide support to reach agreement and coordination among all districts that could send students to the integrated school**, on matters including funding, governance, and programs offered.

▶ Consider alternative CTE center enrollment schedules

LEADERS   District Leaders, School Boards, CTE Centers

SUPPORT   School Leaders, Counselors, NH DOE

Background. Like New Hampshire, the neighboring state of Vermont delivers CTE primarily through regional CTE centers, most of which are collocated on campus with a high school. Students attending neighboring high schools travel to and from the CTE center, which creates many of the same scheduling and transportation challenges faced in New Hampshire. However, some Vermont CTE centers provide students with flexible enrollment options. Rather than travel back and forth to the center for 2 or more years, students may opt to cluster their CTE courses, spending whole days at the CTE center for one semester or academic year. This approach both minimizes time lost travelling between 2 locations, and gives students longer blocks of time to engage in more complex CTE projects and off-site work-based learning experiences.

Strategies. Stakeholders recommended that New Hampshire districts, with support from the NH DOE, explore this or similar models as a way to help more students access CTE. They noted that longer blocks of time would allow students to have deeper and more meaningful hands-on experiences at centers or real worksites. They suggested considering the following strategies:

- **Adopt elements of the Vermont model**. Although students would still need to travel to the CTE center, which may not be as close to their home as their local high school, it would eliminate the 'back and forth' step of home high school to center.

- **Consider formalizing structures for sending school students to take additional academic courses at the host high school where they attend CTE.** Currently, some CTE centers and host high schools occasionally offer this option to students. One host high school and CTE center have even developed a specific writing course for students attending the CTE center.

- **Consider allowing students to enroll full time at the host school** if they wish to attend the CTE center.

- NH DOE could **facilitate exploration of these strategies**, helping districts solicit stakeholder input, identify building capacity, determine student interest, and developing schedules and staffing solutions.

▶ Revise course weighting policies

🛠 **LEADERS** District Leaders, School Boards

🤝 **SUPPORT** NH DOE

Background. For students concerned with maintaining a high-weighted GPA, school or district policies about the relative weight of CTE courses can be a barrier. Several stakeholders noted that honors level or Advanced Placement courses taken at a student's high school are weighted more heavily than CTE courses—even though CTE courses generally bear college credit. Stakeholders often remarked that although such policies might not pose a barrier as challenging as scheduling and transportation issues, they are particularly concerning from an equity lens. That is, discrepant course credit weighting policies can reinforce stigma against CTE programs, insinuating that CTE courses are worth less than other course options.

Moreover, this is not a new issue. In 2007 NH DOE released the report *New Hampshire's Vision for Redesign: Moving from High Schools to Learning Communities*[9] after several years of data collection and summits and the rewriting of the minimum standards to include competency-based education. The report noted:

> *Career and Technical Education (CTE) programs are held to high standards statewide, and have begun to be valued as such. Nevertheless, some students have indicated an interest in CTE classes but said they would not enroll in them since they knew that those were not as heavily weighted as academic classes. They felt it would be detrimental to their overall GPA and ultimately effect their chances to go to a 4-year college. Schools should review and revise any policies that hold CTE courses to less than high standards or describe them as having lesser credit weight.*

Strategies

- **Districts that still weight courses to determine ranked student GPA should consider eliminating the policy**, as some districts have already done. Alternatively, districts might reexamine why CTE courses—which generally bear college credit—are not weighted similarly to other potentially college credit-bearing courses such as Advanced Placement courses. Districts interested in pursuing this potential strategy might find that school board members are important stakeholders to collaborate with.

- NH DOE should **consider pursuing legislative change** with support from state lawmakers and other stakeholders.

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[9]Unpublished report provided by NH DOE.

▶ Expand opportunities for embedded academic credit in CTE courses

LEADERS   District Leaders, School Boards

SUPPORT   School Leaders, CTE Centers, Educators, NH DOE

Background. Advocates of CTE often note that students appreciate seeing how academic subjects, such as math, science, and English language arts have practical applications in their programs of study. To reflect such subject matter learning that may already be embedded in CTE course content, districts could consider formally recognizing certain CTE courses as counting toward required credits in academic subjects. New Hampshire's Learn Everywhere initiative, which prioritizes subject matter competency, could be a helpful framework for identifying where CTE courses fit into subject specific learning standards.

Strategies. Stakeholders discussed several strategies to support schools and districts in recognizing embedded academic credit in CTE courses, many of which could be pursued simultaneously.

- Regional district, school, CTE center, and school board leaders could **collaborate to review opportunities and come to a formal agreement for accepting embedded credit across district, school, and center curricula**.

- NH DOE could **support schools and districts in cross-walking CTE courses to academic standards** to provide guidance on the competencies that a CTE course grants, and showing the extent to which a CTE course crosswalks with academic standards.

- NH DOE could then **release a formal statement on the cross-walk activity and provide professional learning opportunities** to help school and district leaders, educators, counselors, school board members, and institutions of higher education understand its potential.

- NH DOE could **support further this effort by identifying and sharing best practices from CTE centers** and sending schools in New Hampshire or other states schools where procedures for recognizing embedded academic credit works well.

- NH DOE could **provide guidance for schools and districts on how CTE courses could be leveraged to fulfill new state requirements**. For example, SB276[10] provides an opportunity for students to earn additional graduation endorsements upon completing CTE courses).

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[10]New Hampshire Senate Bill 276 of the 2019 legislative session.

▶ Align program offerings with student demand and workforce needs

LEADERS   CTE Centers, Industry Partners

SUPPORT   NH DOE, Other State Agencies

In line with Perkins funding regulations and best practice in CTE, leaders of CTE centers currently engage in annual local needs assessments to ensure that their programs are meeting the needs of their students and aligned to their regional economy. However, several stakeholders noted that the demand for certain CTE programs aligned with high-growth career pathways (such as health care) exceeds the capacity to enroll interested students. Conversely, some stakeholders reported that other CTE programs which are also aligned to career pathways with promising local economic growth (such as manufacturing) are underenrolled, or in some cases not offered in key regions of the state.

▶ Consider revising application and enrollment policies

LEADERS   CTE Centers

SUPPORT   Districts, School Counselors

Background. At many CTE centers, students from sending schools must apply to attend and commit to completing the full program of studies in their desired CTE area. Conversely, in some cases students from neighboring host schools are not required to apply for admission and can enroll in courses as electives rather than commit to a full program of studies. Stakeholders noted that this practice creates access inequity between host and sending school students, but also noted that the practice might be difficult to change—especially if the local host community believes that if they are supporting the largest proportion of the budget of the CTE center, they deserve more seats and flexibility for their students' enrollment.

Strategies

- **Share the message that there is a discrepancy in how sending versus host students are allowed to enroll**, and show district leaders, school leaders, and school board members the data on how few students come from sending schools versus host schools.

- If an application process remains, **consider creating a common application template and process** across the region to streamline the application experience for students and the counselors who support them.

- **Provide state-level guidance and encouragement for regional agreements** to address any discrepancies, and/or provide technical assistance for using a common application process within regions.

Appendix A
Research Methods and Findings by Stakeholder Group

RMC conducted individual interviews and focus groups with multiple stakeholder groups. Additionally, a survey was conducted with school counselors.

Exhibit A1
Individuals Reached Through Interviews, Focus Groups, and Surveys

Stakeholder Group or Role	Individuals Reached	Contact Format(s)
CTE directors	25	Individual interviews
School counselors[a]	67	Individual interviews, focus groups, survey
CTE coordinators and ELO coordinators[b]	6	Individual interviews, focus groups
Sending HS principals & assistant principals	5	Individual interviews, focus groups
Middle school principal	1	Individual interview
Superintendents	8	Individual interviews
School board members	11	Focus groups
CTE Teachers	6	Focus groups
Parents	4	Focus groups, individual interviews
Students attending CTE	4	Focus groups, individual interviews
Students not attending CTE	1	Individual interview
Industry/community representatives	8	Focus groups, individual interviews

[a]Individuals in this category had varying specific titles (e.g., student support specialist, counseling director), but identified as serving in a student counseling or advising capacity.
[b]As with school counselors, specific titles in this category varied, but individuals in this role had primary responsibility for managing CTE and/or Extended Learning Opportunity (ELO) programs at host schools, sending schools, and/or CTE centers.

Barrier	CTE Directors	Superintendents	Counselors	Students	Parents	CTE Teachers	CTE coordinators	Industry/Community Members	School Board Members	Principals	Total
Systems											
Scheduling (in general)	10	1	55	3	1		2	3	2	2	79
Scheduling (not wanting to miss nonacademic home school activities)				31							31
Calendar misalignment	19					1	2	3	1	1	27
Transportation	5		20	3							28
Funding	8	1									9
Information and Understanding											
Stigma	5		9								14
Lack of knowledge—parent, student, counselor	7		20		1			1			29
Parent or counselor discouragement of attending CTE	3		23								26
Student concerns about value of CTE for college applications			26								26
Academic Equity											
Course credit weighting	3		1	1		2	1		3	1	12
Local eligibility policies	1				1	1				1	4
Graduation requirements	1		2								3

exhibit continues

Exhibit A2 continued

Barrier	CTE Directors	Superintendents	Counselors	Students	Parents	CTE Teachers	CTE coordinators	Industry/Community Members	School Board Members	Principals	Total
Enrollment											
Application process	2		22								24
Program availability	2							2			4
Other											
Special education or ELL status	2		2								4
CTE governance and leadership	4										4

Exhibit A3   Frequency of Mentions of Selected Strategies to Improve CTE Access by Stakeholder Group

Strategy	CTE Directors	Superintendents	Counselors	Students	Parents	CTE Teachers	CTE Coordinators	Industry/Community Members	School Board Member	Principal	Total
Improve regional calendar alignment	9	3			1	2	3	1	1		20
Statewide campaign	4		2			3	1	2	2		14
Pilot a CTE high school (MA or MST model)	6		1		3		1		1	1	13
Counselors (target as part of statewide campaign, through ongoing professional development, and/or fund CTE/career-specific counselors for all schools/centers)—career counseling as part of credentialing	2		3		1	1	2	1	1		11
Change course weighting policies	2	1		1		2	1		3	1	11
Align programs with student demand and workforce needs	3	1	2		1			4			11
Expand CTE in middle grades	2	1	1	1				1	2	1	9
Allow students to take some academic classes at the host school or fully enroll at host school	4						1	1	1		7
Provide parents with information about college credit opportunities, cost savings, quality of facilities and programs					1	2	1	1		1	6
Alternative CTE enrollment schedules (VT model)	3							2			5
Expand embedded academic credit	3	1				1				1	6

exhibit continues

Exhibit A3 continued

Strategy	CTE Directors	Superintendents	Counselors	Students	Parents	CTE Teachers	CTE Coordinators	Industry/Community Members	School Board Member	Principal	Total
Additional state funding for CTE	2					1	1			1	5
Provide additional funding and professional development support for CTE teachers			1		1	1			2		5
Provide more CTE instruction through multiple course shifts	2					1		1	1		5
Expand the use of current CTE students as ambassadors					1	2	1	1			5
Provide all students (from host and sending schools) with the chance to engaging in a hands-on exploratory at CTE centers	1			1		1	1				4
Make CTE participation a graduation requirement			1			3					4
Expand CTE programs in local high schools	1								2		3
Expand knowledge and use of VLACs classes to fill in scheduling gaps				1					2		3
Feature successful CTE alums	1				1	1					3
Offer mixed grade CTE classes							2				2
Dedicated CTE paraprofessionals, or provide additional training for paraprofessionals in CTE to support the needs of CTE students	2										2
Educate school board members about CTE									2		2

exhibit continues

Strategy	CTE Directors	Superintendents	Counselors	Students	Parents	CTE Teachers	CTE Coordinators	Industry/Community Members	School Board Member	Principal	Total
State set CTE enrollment benchmark higher	1										1
Involve community groups and other agencies in transportation solutions					1						1
Elevate CTE participation, such as through making it part of the NH scholars program			1								1
Expand and improve access to Extended Learning Opportunity programs and internships	1	1									1
Develop a statewide Grades 5–12 career education curriculum	1										1
Ensure that all students receive personalized college and career plans	1										1
Increase business and industry investment in the region aligned to local programs		1									1

Appendix B
Protocols and Survey Instruments

Protocols and survey instruments are provided to help readers understand the type and scope of questions asked of research participants. Participants' responses are summarized in the main text of this report, and frequency counts of themes mentioned by participant groups are illustrated in Appendix A. However, to ensure participant confidentiality and anonymity, individual participant response data are not included in this report.

CTE Directors—Interview Questions

CTE Center Coordinators—Interview/Focus Group Questions

CTE Teachers—Interview/Focus Group Questions

NH CTE Superintendent—Interview Questions

School Board—Interview/Focus Group Questions

School Leaders—Interview Questions

School Counselor Survey

Industry and Community Representatives—Interview/Focus Group Questions

Parents—Interview/Focus Group Questions

Students—Interview/Focus Group Questions

CTE Center Directors—Interview Questions

1. Can you briefly describe your center and what you believe are the core characteristics that make this a strong CTE Center?

2. Tell us about your student enrollment.

   a) To what extent are your seats filled, at the whole center, and in terms of how many allocated seats your sending schools use?

   b) How do you feel about the center's current enrollment level?

   c) What are your student demographics like? Are they representative of regional demographics (gender, SES, race/ethnicity, EL, Special Needs), overall and by program offerings?

3. What are the barriers to enrolling at your center? What are the obstacles students face?

4. How do prospective students learn about your Center? What outreach and communication strategies do you use?

5. How do families/parents of prospective students learn about your Center? What outreach and communication strategies do you use?

6. What is one thing that would contribute to more equitable access to your center?

7. What changes would help promote equitable access across the state?

8. How do you determine student success? What factors most contribute to their success?

9. What factors most contribute to students not being successful, or who leave the CTE program?

10. To what extent do your partnerships with business, industry and postsecondary institutions contribute to student success? How?

11. How do you use data to identify gaps in equitable access to your program? What have you learned?

12. Is there anything we haven't discussed that you feel is important to share?

CTE Center Coordinators—Interview/Focus Group Questions

1. Can you briefly describe your role?

2. Tell us about your center. What works well?

3. What are the biggest barriers students face in attending your center?

4. What local (school, center, district) changes could increase access to your CTE center?

5. Imagine you are in charge of CTE across the state. How do you increase access? What is the first change you would make?

6. Is there anything else I haven't asked that you would like to share?

CTE Teachers—Interview/Focus Group Questions

1. Tell me about yourself, your program, and your school/center.

2. Generally, what works well?

3. What are some of the CTE access barriers for your students? Which is/are the biggest or most common?

   d) Are your classes impacted by students relying on busses to get back and forth from their sending school? How are you accommodating that?

   e) How do different school calendars impact your classes?

4. You have a magic wand. How would you increase access to the class that you teach? The program you teach at (e.g., CTE center)?

5. You are in charge of CTE across the state. How do you increase access? What is the first change that you would make?

6. What are your thoughts on the school year resuming in fall? What could help if we face more remote learning?

7. Is there anything else you would like to share?

NH CTE Superintendent—Interview Questions

1. What works well in your district's relationship with the CTE center(s) that your students attend? What could be improved?

2. Tell us about your experience as part of the annual regional agreement meetings?

3. Tell us about any instances of CTE topics being addressed by your school board?

4. How do you approach thinking about costs of sending students to CTE as part of your annual budgeting process?

5. Is there anything *local communities* (e.g., your district, or the districts in your region) could do to improve student access to CTE? Is there anything *NH DOE* could do?

6. Is there anything else I haven't asked that you think is important to share?

School Board—Interview/Focus Group Questions

1. Please briefly introduce yourself. What district are you from? How long have you been on the school board? Does your district have a CTE center?

2. What are one or two things you know about CTE—in New Hampshire overall, and/or in your district? Or, if you don't know yet know very much about CTE, what are one or two things that you would like to know?

3. When matters related to CTE come up at your school board meetings, what kinds of information do the board hear, or what data does the board look at to help make decisions? Can you share some examples?

4. We've heard from other stakeholders that *scheduling* is an access barrier for many students.

   f) What are your thoughts on that, in the context of your district?

   g) How does your board approach decisions around setting school calendars? What information or data do you consider?

   h) Have you, or have other members of your board, engaged in any annual alignment of school calendars in your CTE region?

5. We've also heard from other stakeholders that *funding and transportation* are access barriers, and these issues are often closely linked because transportation is a significant expense.

   a) What are your thoughts on that, in the context of your district?

   b) How does your board approach decisions around budgeting for CTE? What information or data do you consider?

   c) How does your board think about what your district can afford in terms of funding for CTE transportation and tuition?

6. Are there other issues that might impact student access to CTE in your district? How has your board approached them?

7. Is there anything else I haven't asked that you think is important to share?

School Leaders—Interview/Focus Group Questions

1. Tell me about your school. What CTE Center(s) can students attend?

2. Generally, what works well in your relationship with the CTE center(s)

3. What are the challenges?

4. How do your students learn about the CTE centers?

5. How do you parents learn about it?

6. What changes would you make to address the challenges you see? (Locally – at your school or district, or center(s)? Or statewide?)

School Counselor Survey

About the Survey

In May 2020 RMC administered an online survey about increasing access to CTE to school counselors. RMC provided the survey link to the New Hampshire School Counselors Association, which sent an email inviting school counselors registered with the association to participate. RMC also provided the link to CTE directors, instructing them to share it with any CTE center staff in a counseling role who might not be registered with the New Hampshire School Counselors Association. All potential participants were advised (in the opening content of the survey and in the email transmittal language) that completing the survey was voluntary and responses would remain anonymous.

The survey, which was administered through SurveyMonkey, a secure, commonly used online survey platform, included a mix of open- and closed-ended questions. The survey was open for responses for approximately 3 weeks. A total of 62 individuals responded, of whom 84% completed the survey.

School Counselor Survey

Dear Colleague,

The New Hampshire Department of Education (NH DOE) is exploring options for increasing equitable student access to career and technical education (CTE). We value your input and hope you will complete this survey, because we know that counselors play an essential role in helping students plan for college and career.

RMC Research, an independent research organization contracted by the NH DOE, is collecting the survey data. Results will be shared with the NH DOE and the New Hampshire Association of School Counselors. NH DOE values the voice of school counselors, and your input will make a difference to our process.

 Completing the survey is voluntary and the results will be anonymous.

If you have any questions about the survey, please contact Amanda Trainor of RMC Research at atrainor@rmcres.com, or Eric Frauwirth, Director of NH DOE's Bureau of Career Development at eric.c.frauwirth@doe.nh.gov

Thank you for your time and sharing your input!

School Counselor Survey

* 1. Overall, how would you rate your knowledge of career and technical education (CTE) in New Hampshire?

  ◯ I know very little about CTE

  ◯ I have some knowledge of CTE

  ◯ I have good knowledge of CTE

  ◯ I am very knowledgeable about CTE

* 2. Overall, how would you rate your knowledge of technical career pathways (such as: apprenticeships, dual enrollment, which community colleges offer specific CTE programs, college credits that can be earned via secondary CTE?)

  ◯ I know very little about these pathways

  ◯ I have some knowledge of these pathways

  ◯ I have good knowledge of these pathways

  ◯ I am very knowledgeable about these pathways

* 3. How do your **students** learn about CTE programs that they could attend? *(choose all that apply)*

  ☐ From school counselors

  ☐ Informally through their student peers

  ☐ Open houses

  ☐ Tours

  ☐ Attending CTE classes/shadowing

  ☐ CTE directors give formal presentations at our school

  ☐ CTE students give formal presentations at our school

  ☐ I'm not sure

  ☐ Other (please specify)

    [ ]

* 4. Which of these methods do you think is **most effective in helping students** learn about the CTE programs they could attend? *(choose one)*

○ School counselors

○ Informally through their student peers

○ Open houses

○ Tours

○ Attending CTE class/shadowing

○ CTE directors give formal presentations at our school

○ CTE students give formal presentations at our school

○ I'm not sure

○ Other (please specify)

[   ]

* 5. How do **parents** of your students learn about CTE programs that their children they could attend? *(choose all that apply)*

☐ From school counselors

☐ Informally through word of mouth

☐ CTE center open houses

☐ I'm not sure

☐ Other (please specify)

[   ]

* 6. Which of these methods do you think is **most effective in helping parents** learn about the CTE programs their children could attend? *(choose one)*

○ School counselors

○ Informally through word of mouth

○ CTE center open houses

○ I'm not sure

○ Other (please specify)

[   ]

* 7. If CTE directors or visiting students give formal presentations at your school about CTE, is student attendance at these presentations required or optional?

○ Required

○ Optional

○ I'm not sure

○ Other (please specify)

[   ]

* 8. What are some things that get in the way of students attending a CTE center? *(choose all that apply)*

☐ Transportation to and from the CTE center

☐ Scheduling conflicts between classes at the student's high school and the CTE center

☐ Students not knowing about the CTE center

☐ Students hearing negative feedback from their peers about the CTE center

☐ Students not wanting to miss non-academic parts of the day at their high school (e.g. lunch, school activities)

☐ Student concerns about whether CTE courses or other academic courses will better prepare them for college

☐ Parents discouraging students from attending the CTE center

☐ School counselors discouraging students from attending the CTE center

☐ Students not being accepted by the CTE center, if applicable

☐ Other (please specify)

[   ]

* 9. Of all the things that could get in the way of students attending a CTE center, which one do you think is the most common barrier? *(choose one)*

○ Transportation to and from the CTE center

○ Scheduling conflicts between classes at the student's high school and the CTE center

○ Students not knowing about the CTE center

○ Students hearing negative feedback from their peers about the CTE center

○ Students not wanting to miss non-academic parts of the day at their high school (e.g. lunch, school activities)

○ Student concerns about whether CTE courses or other academic courses will better prepare them for college

○ Parents discouraging students from attending the CTE center

○ School counselors discouraging students from attending the CTE center

○ Students not being accepted by the CTE center, if applicable

○ Other (please specify)

[   ]

* 10. The following questions ask for your thoughts about the **primary CTE center(s)** that the students you serve can choose to attend.

	Strongly disagree	Disagree	Agree	Strongly Agree
I can describe the programs they offer to my students.	○	○	○	○
I can explain to students what kind of careers these programs can prepare them for.	○	○	○	○
The programs offered are of high quality.	○	○	○	○
Parents believe that CTE is a good option for their children.	○	○	○	○
The programs offered are aligned to the workforce needs in our region of NH.	○	○	○	○
Students who are English learners can succeed in the programs they offer.	○	○	○	○
Students with disabilities (with or without IEP or 504 plans) can succeed in the programs they offer.	○	○	○	○

* 11. The following set of questions asks about your perceptions of CTE programs in general.

	Strongly disagree	Disagree	Agree	Strongly Agree
Students who plan to attend a four-year college can benefit from attending CTE programs.	○	○	○	○
Students who do not plan to attend a four-year college can benefit from attending CTE programs.	○	○	○	○
My knowledge of college admissions expectations influences the guidance I give students about attending a CTE program/	○	○	○	○

* 12. If you work at a high school, in what grade may students at your school **first** enroll in a CTE center?

○ Grade 9

○ Grade 10

○ Grade 11 or 12

○ Not applicable (elementary or middle schools)

5

* 13. My school has specific procedures regarding whether a student is eligible to attend a CTE program or not (e.g., student must be a certain grade, student must have completed certain academic requirements, etc).

○ Yes

○ No

○ I'm not sure

○ Not applicable to my school (elementary or middle schools)

* 14. What are your school's specific procedures regarding whether a student may attend a CTE program?

* 15. Do you use career assessments with your students?

◯ Yes

◯ No

* 16. At what grade level do you **begin** to use career assessments with your students?

○ Before grade 5

○ Grade 5

○ Grade 6

○ Grade 7

○ Grade 8

○ Grade 9

○ Grade 10 or later

17. Can you briefly describe how you use career assessments with your students?

* 18. Does your school offer any career pathway courses?

○ Yes

○ No

○ I'm not sure

* 19. What career pathway courses does your school offer?

* 20. Are you familiar with the NH legislation requiring incoming 9th graders to have a personal pathway? (A description and link to the legislation is below):

E:5 IX   Beginning in September 2020, and each year thereafter, school districts shall, for entering high school freshman: assess student career interests; document school pathways to career readiness credentials; advise all entering high school students how to achieve a career ready credential upon graduation; and record on a student's transcript progress towards the credential.
http://www.gencourt.state.nh.us/rsa/html/xv/188-e/188-e-mrg.htm

○ Yes

○ No

○ I'm not sure

* 21. How do you feel about this requirement?

○ I strongly **do not** support it

○ I somewhat **do not** support it

○ I somewhat **support** it

○ I strongly **support** it

○ Other (please specify)

[ ]

22. What is most challenging for you about helping your students attend a CTE center?

23. What do you believe is most valuable for students about attending a CTE center?

24. Is there anything else that you would like to share with us?

* 25. What is your role?

○ School counselor

○ Director of counseling

○ Career counselor

○ Other (please specify)

* 26. What grade levels are the students that you serve?

○ Elementary (PK - 5)

○ Middle (6-8)

○ High (9-12

○ Other (please specify)

* 27. What is your primary work setting?

○ A district

○ A CTE center

○ A high school that has an on-site CTE center

○ A high school that does not have an on-site CTE center

○ A middle school

○ An elementary school

○ Other (please specify)

* 28. How many years of experience do you have as a counselor?

○ 0-5

○ 6-10

○ 11-15

○ More than 15 years

* 29. Approximately what percent of your time do you spend advising students about college and/or career choices (including options for attending CTE)?

○ 25% or less

○ 26-50%

○ 51-75%

○ More than 75%

Increasing Equitable Access to Career and Technical Education

Thank you very much for completing this survey! We appreciate your input.

If you have any further questions about this survey or our work to increase equitable access to CTE in New Hampshire, please feel free to contact Amanda Trainor at atrainor@rmcres.com or Eric Frauwirth at eric.c.frauwirth@doe.nh.gov.

School Counselors—Interview/Focus Group Questions

1. Tell me about your role.

2. Tell me about your school, and the CTE center(s) your students could attend.

3. What do you find generally works well?

4. What are the biggest barriers students face in attending your center/the CTE center(s)?

5. What changes would you make to support equitable access to CTE? (Locally, and/or at the state level?)

6. Is there anything else you would like to share?

Industry and Community Partners—Focus Group Questions

1. Tell me about your industry, role, and perspective on CTE.

2. What are the barriers students face in accessing CTE, from your perspective?

3. What strategies could be increase equitable access?

   a) What changes could me made locally (centers, schools, districts)?

   b) What changes could be made at the state level?

   c) What could industry partners do to support improvements?

Parents—Interview/Focus Group Questions

1. Tell me about your family and your children. What are there ages and grades? What schools do they attend?

2. Tell me about your perspective on CTE. What are some things you know, some things you want to know?

3. How did you/your children learn about CTE opportunities?

4. Why or why not did your students end up attending a CTE center?

5. Have you visited your area CTE center(s)? Have your child(ren)?

6. If your child(ren) knew about and were interested in CTE, what challenges or barriers did they face?

7. What changes would you recommend to make CTE more accessible?

Students Attending CTE Centers—Interview/Focus Group Questions

1. Can you introduce yourself—your name, what grade you are in, what high school you go to, and what CTE program are you part of? What are your education and career goals?

2. We want to hear about your decision to enroll in your program. How did you hear about the CTE center? How did you learn more about the programs and the process to enroll?

3. What or who played the biggest role in your decision to enroll in CTE? Was there anyone who thought attending a career program might not be a good idea?

4. Can you describe the process of applying to or enrolling in the CTE center—what did you have to do? How did you get help if you needed it?

5. Thinking about your experiences (specifically, before we started remote learning)—what is challenging about being in a CTE program?

   a. What is it like doing remote learning in CTE?

6. Imagine you are put in charge of running your regional CTE center. What is the first barrier you would tackle (e.g., if the schedule is a challenge, how would you fix it)?

7. What are some perceptions about CTE or CTE students? Do they align with your experience?

8. Imagine you are put in charge of recruiting incoming high school students to the CTE program in your region. How would you go about this? What would your message to them be?

9. Is there anything else you would like to share?

Students NOT Attending CTE Centers—Interview/Focus Group Questions

1. Can you introduce yourself—your name, what grade you are in, what high school you go to? What are your education and career goals?

2. How did you hear about the CTE center(s) that you could go to? What did you hear about it?

3. Overall, who or what most influenced your decision not to attend the CTE center?

4. Not everyone chooses to go to the CTE center(s), and that is OK. Thinking about your experience, though, is there anything you wish you had known or learned about related to the CTE center?

5. Do you have friends or classmates who also chose not to attend the CTE center? If so, are you aware of why they chose not to?

6. Do you have friends or classmates who do attend the CTE center? If so, are you aware of anything that sometimes makes it hard for them to attend?

7. Is there anything else you would like to share?

Appendix C
New Hampshire, National, and Neighbor States CTE Enrollment

In school year 2018–2019, students were eligible to attend CTE centers in Grades 11 and 12. At that time 9,428 New Hampshire students attended programs at CTE centers— about 35% of all Grade 11 and Grade 12 students statewide (n = 26,924).[11]

Exhibit C1
CTE Enrollment 2018–2019

Grades 11–12

Not CTE 65% CTE 35%
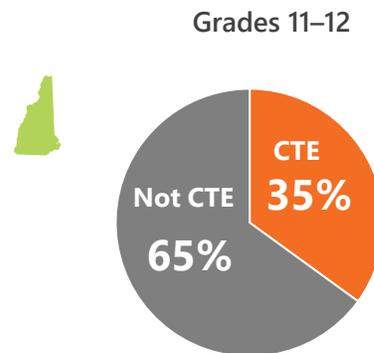
Beginning in school year 2019–2020, Grade 10 students also became eligible to attend programs at CTE centers. In that school year, 10,265 students attended programs at CTE centers, which represents about 25% of all New Hampshire students in Grades 10, 11, and 12 (n = 40,549).[12]

Exhibit C2
New Hampshire CTE Enrollment 2019–2020

Grades 10–12

Not CTE 75% CTE 25%
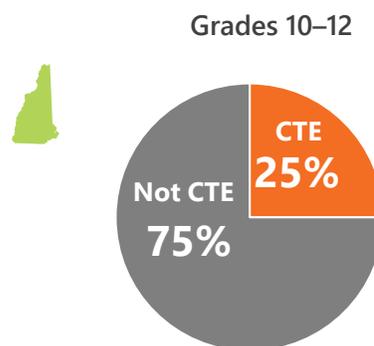
[11]Data for New Hampshire Grade 10, 11, and 12 students in school years 2018–2019 and 2019–2020 from the New Hampshire Department of Education; see https://www.education.nh.gov/who-we-are/division-of-educator-and-analytic-resources/bureau-of-education-statistics/enrollments-by-grade
[12]Data for student enrollment at CTE centers in school year 2019–2020 provided by the New Hampshire Department of Education (unpublished).

Nationally, the grade level in which students are eligible to participate in CTE varies. Generally, though, secondary CTE encompasses students in Grades 9 through 12. In school year 2018–2019, approximately 52% of secondary students in the United States participated in CTE programs.[13]

Exhibit C3
National CTE Enrollment 2018–2019
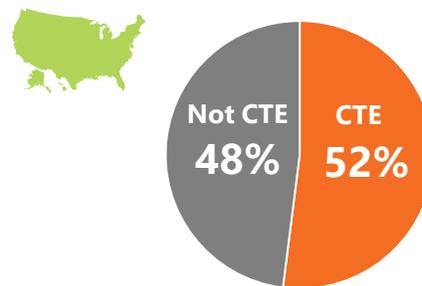
In New Hampshire's closest neighboring states—Massachusetts, Vermont, and Maine—secondary student participation in school year 2018-–2019 was 21%, 19%, and 15%, respectively.

Exhibit C4
CTE Enrollment in Selected States 2018–2019

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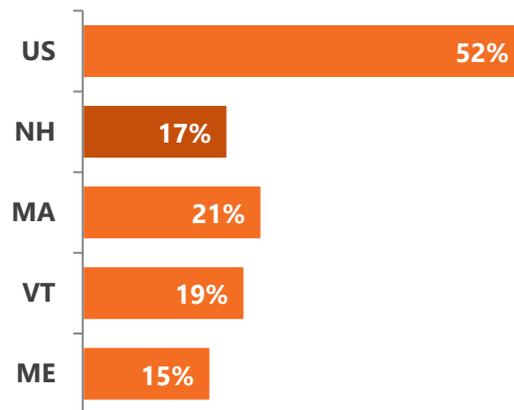
[13]Data for U.S. students, including NH neighbor states, generated using the Elementary/Secondary Information System (ELSi) application from the National Center for Education Statistics with the following filters applied: State(s) (All Years): All 50 + DC; see http://nces.ed.gov/ccd/elsi/. Data for U.S. CTE students, including NH neighbor states, generated using the PCRN data explorer application from the U.S. Department of Education Office of Career, Technical, and Adult Education Methodology with the following filters applied: Select "CTE Participant Enrollment. See https://perkins.ed.gov/pims/DataExplorer/CTEParticipant. Data from Arkansas, Kansas, Nebraska, North Carolina, and Washington are excluded from this calculation because they include students in middle grades in secondary CTE participation reporting.

Appendix D
Additional Regional Proportional Enrollments

Key

- ■ CTE center host school
- ■ Other school in region
- ■ CTE center host school
- ■ School in region participating in CTE center
- ■ School in region NOT participating in CTE center
- ■ School NOT in region participating in CTE center

Columns on the left show the proportional enrollment of students at the *high schools* in each region. Columns on the right show the proportional enrollment of *students from each high school that attend the center*, even if that high school is not officially part of the region.

Region 2[14] (2 schools)

74%	**Berlin HS**
26%	Gorham HS

Berlin Center (serves Region 2)

87%	**Berlin HS**
13%	Gorham HS

Region 3 (7 schools)

11%	**Groveton HS**
7%	**Lin-Wood HS**
11%	**Lisbon HS**
20%	**Littleton HS**
12%	**Profile HS**
6%	**Stratford HS**
33%	**White Mountains HS**

Hugh Gallen Center (serves Region 3)

3%	**Groveton HS**
1%	**Lin-Wood HS**
22%	**Lisbon HS**
46%	**Littleton HS**
7%	**Profile HS**
0%	Stratford HS
22%	**White Mountains HS**

Region 3 (7 schools)

11%	**Groveton HS**
7%	**Lin-Wood HS**
11%	**Lisbon HS**
20%	**Littleton HS**
12%	**Profile HS**
6%	**Stratford HS**
33%	**White Mountains HS**

White Mountains Center (serves Region 3)

4%	**Groveton HS**
8%	**Lin-Wood HS**
0%	Lisbon HS
10%	**Littleton HS**
1%	**Profile HS**
0%	Stratford HS
77%	**White Mountains HS**

[14]Six regions are not included in this appendix. CTE centers serving regions 1, 4, 7, and 20 are located in the state of Vermont. CTE centers in regions 5, 6, and 19 serve very few or no sending school students.

Region 6 (6 schools)

%	School
33%	**Dover HS**
6%	Newmarket HS
3%	Nute HS
19%	Oyster River HS
10%	Somersworth HS
29%	Spaulding

Dover CTE Center (serves Region 6)

%	School
78%	**Dover HS**
0%	Newmarket HS
3%	Nute HS
7%	Oyster River HS
3%	Somersworth HS
7%	Spaulding

Region 8 (6 schools)

%	School
16%	Belmont HS
12%	Franklin HS
19%	Gilford HS
13%	Inter-Lakes HS
22%	**Laconia HS**
18%	Winnisquam HS

Huot Center (serves Region 8)

%	School
12%	Belmont HS
5%	Franklin HS
17%	Gilford HS
7%	Inter-Lakes HS
48%	**Laconia HS**
10%	Winnisquam HS
1%	Newfound HS

Region 8 (6 schools)

%	School
16%	Belmont HS
12%	Franklin HS
19%	Gilford HS
13%	Inter-Lakes HS
22%	Laconia HS
18%	**Winnisquam HS**

Winnisquam Center (serves Region 8)

%	School
2%	Belmont HS
7%	Franklin HS
9%	Gilford HS
7%	Inter-Lakes HS
7%	Laconia HS
65%	**Winnisquam HS**
4%	Merrimack HS

Region 9 (4 schools)

16%	Farmington HS
46%	**Kingswood HS**
10%	Moultonborough HS
28%	Prospect Mountain HS

Lakes Region Center (serves Region 9)

5%	Farmington HS
80%	**Kingswood HS**
6%	Moultonborough HS
10%	Prospect Mountain HS

Region 9 (7 schools)

14%	Belmont HS
10%	Franklin HS
17%	Gilford HS
11%	Interlakes HS
19%	**Laconia HS**
13%	Newfound HS
15%	Winnisquam HS

Huot CTE Center (serves Region 9)

12%	Belmont HS
5%	Franklin HS
17%	Gilford HS
7%	Interlakes HS
48%	**Laconia HS**
1%	Newfound HS
10%	Winnisquam HS

Region 10 (3 schools)

54%	**Claremont HS**
32%	Newport HS
14%	Sunapee HS

SRV Claremont (serves Region 10)

79%	**Claremont HS**
16%	Newport HS
5%	Sunapee HS

Region 10 (3 schools)

54%	Claremont HS
32%	**Newport HS**
14%	Sunapee HS

SRV Newport (serves Region 10)

12%	Claremont HS
83%	**Newport HS**
4%	Sunapee HS
1%	**Mascoma HS**

Region 11 (9 schools)

11%	Bow HS
28%	Concord HS
6%	Hillsboro-Deering HS
5%	Hopkinton HS
11%	John Stark HS
9%	Kearsarge HS
14%	Merrimack Valley HS
13%	Pembroke HS
3%	Pittsfield HS

Concord Center (serves Region 11)

7%	Bow HS
43%	Concord HS
3%	Hillsboro-Deering HS
2%	Hopkinton HS
4%	John Stark HS
5%	Kearsarge HS
19%	Merrimack Valley HS
12%	Pembroke HS
3%	Pittsfield HS
0.16%	Manchester Memorial HS
0.16%	Newport HS

Region 12 (6 schools)

14%	Coe-Brown Academy
29%	Dover HS
3%	Nute HS
17%	Oyster River HS
28%	Somersworth HS
9%	Spaulding HS

Creteau Center (serves Region 12)

0%	Coe-Brown Academy
1%	Dover HS
0.26%	Nute HS
1%	Oyster River HS
0%	Somersworth HS
98%	Spaulding HS

Region 12 (6 schools)

14%	Coe-Brown Academy
29%	Dover HS
3%	Nute HS
17%	Oyster River HS
28%	Somersworth HS
9%	Spaulding HS

Dover Center (serves Region 12)

0%	Coe-Brown Academy
77%	Dover HS
3%	Nute HS
7%	Oyster River HS
3%	Somersworth HS
7%	Spaulding HS
0.21%	Newmarket HS
0.21%	Portsmouth HS

Region 12 (6 schools)

14%	Coe-Brown Academy
29%	Dover HS
3%	Nute HS
17%	Oyster River HS
9%	Somersworth HS
28%	Spaulding HS

Somersworth Center (serves Region 12)

0%	Coe-Brown Academy
4%	Dover HS
0%	Nute HS
2%	Oyster River HS
91%	Somersworth HS
3%	Spaulding HS

Region 13 (3 schools)

21%	Fall Mountain HS
59%	Keene HS
20%	Monadnock HS

Cheshire Center (serves Region 13)

4%	Fall Mountain HS
91%	Keene HS
5%	Monadnock HS
0.28%	Conval HS

Region 13 (3 schools)

21%	Fall Mountain HS
59%	Keene HS
20%	Monadnock HS

Fall Mountain Center (serves Region 13)

97%	Fall Mountain HS
1%	Keene HS
0%	Monadnock HS
1%	Claremont HS

Region 14[15] (3 schools)

27%	Conant HS
50%	Conval HS
23%	Mascenic HS

Region 14 Center (serves Region 14)

2%	Conant HS
97%	Conval HS
0%	Mascenic HS
1%	Wilton-Lyndeboro HS

Region 14 Auto Program (serves Region 14)

27%	Conant HS
36%	Conval HS
9%	Hollis-Brookline HS
9%	Milford HS
18%	Wilton-Lyndeboro HS
0%	Mascenic HS

Region 15 (8 schools)

11%	Bedford HS
12%	Exeter HS
8%	Goffstown HS
10%	Londonderry HS
3%	MST High School
10%	Manchester Central
10%	Manchester Memorial
5%	Manchester West

Manchester School of Technology (serves Region 15)

10%	Bedford HS
0.34%	Exeter HS
16%	Goffstown HS
10%	Londonderry HS
28%	MST High School
11%	Manchester Central
19%	Manchester Memorial
5%	Manchester West
1%	Pinkerton Academy
0.17%	Windham HS

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[15]Region 14 also includes a satellite building trades program hosted at Conant High School; however, separate data for those enrollments were not available and are not shown as a separate center in this figure.

Region 16 (8 schools)

Percent	School
14%	Alvirne HS
5%	Campbell HS
15%	Merrimack HS
10%	**Milford HS**
21%	Nashua North HS
23%	Nashua South HS
9%	Souhegan HS
2%	Wilton-Lyndeboro HS

Milford Center (serves Region 16)

Percent	School
0%	Alvirne HS
0%	Campbell HS
0%	Merrimack HS
94%	**Milford HS**
0%	Nashua North HS
0%	Nashua South HS
2%	Souhegan HS
2%	Wilton-Lyndeboro HS
1%	**Bedford HS**
1%	**Goffstown HS**
2%	**Hollis-Brookline HS**

Region 16 (8 schools)

Percent	School
14%	Alvirne HS
5%	Campbell HS
15%	Merrimack HS
10%	Milford HS
21%	**Nashua North**
23%	**Nashua South**
9%	Souhegan HS
2%	Wilton-Lyndeboro HS

Nashua North and South Centers[16] (serve Region 16)

Percent	School
1%	Alvirne HS
0%	Campbell HS
3%	Merrimack HS
0.19%	Milford HS
44%	**Nashua North**
50%	**Nashua South**
0.47%	Souhegan HS
0%	Wilton-Lyndeboro HS
1%	**Hollis-Brookline HS**
0.09%	**Keene HS**

[16]Nashua North High School and Nashua South High school each host a CTE center. However, because data for sending school enrollments at the separate centers were not available, they are reported together in this figure.

Region 16 (8 schools)

14%	**Alvirne HS**
5%	Campbell HS
15%	Merrimack HS
10%	Milford HS
21%	Nashua North HS
23%	Nashua South HS
9%	Souhegan HS
2%	Wilton-Lyndeboro HS

Palmer Center (serves Region 16)

86%	**Alvirne HS**
5%	Campbell HS
4%	Merrimack HS
0.23%	Milford HS
2%	Nashua North HS
1%	Nashua South HS
0.45%	Souhegan HS
0%	Wilton-Lyndeboro HS
1%	**Hollis-Brookline HS**
0.45%	**Londonderry HS**
0.23%	**Timberlane HS**

Region 17 (5 schools)

9%	Pelham HS
46%	**Pinkerton HS**
16%	Salem HS
16%	Timberlane HS
13%	Windham HS

Pinkerton Center (serves Region 17)

5%	Pelham HS
89%	**Pinkerton HS**
1%	Salem HS
2%	Timberlane HS
1%	Windham HS
2%	**Campbell HS**
0.12%	**Sanborn HS**

Region 17 (5 schools)

9%	Pelham HS
46%	Pinkerton Academy
16%	**Salem HS**
16%	Timberlane HS
13%	Windham HS

Salem Center (serves Region 17)

0%	Pelham HS
1%	Pinkerton Academy
77%	**Salem HS**
11%	Timberlane HS
11%	Windham HS

Region 18 (6 schools)

16%	**Exeter HS**
3%	Epping HS
3%	Newmarket HS
4%	Raymond HS
7%	Sanborn HS
10%	Winnacunnet HS

Seacoast Center (serves Region 18)

49%	**Exeter HS**
8%	Epping HS
9%	Newmarket HS
6%	Raymond HS
15%	Sanborn HS
11%	Winnacunnet HS
0.14%	Campbell HS
0.28%	Manchester Central
0.14%	Pembroke HS
0.14%	Portsmouth HS
0.14%	Salem HS
0.28%	Timberlane HS

Appendix E
New Hampshire and National Enrollment by Race, Gender, English Language, and Disability Status

Exhibit E1
Overall, CTE participation by race in New Hampshire closely resembles the state's secondary student population by race, with White students slightly overrepresented.[17,18,19]

	Students Grades 11–12 New Hampshire	NH CTE
American Indian/Alaska Native	0%	0%
Asian/Pacific Islander	3%	3%
Black/African American	2%	2%
Hispanic/Latino	4%	5%
White	87%	88%
Multiple	2%	2%
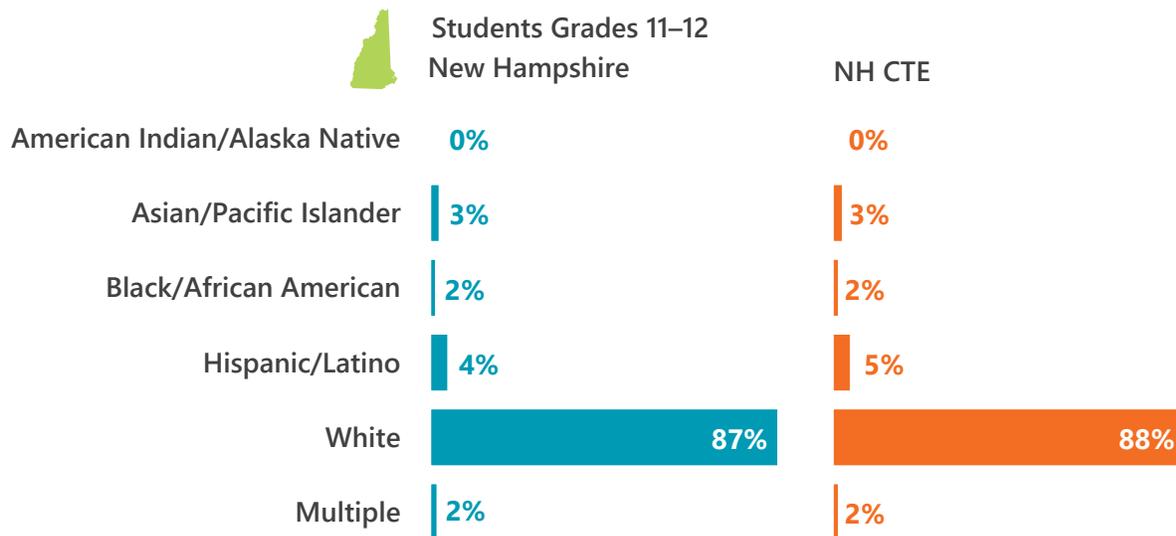
Exhibit E2
National secondary and CTE enrollment.[20,21]

	Students Grades 9–12 United States	United States CTE
American Indian/Alaska Native	1%	1%
Asian/Pacific Islander	5%	4%
Black/African American	15%	15%
Hispanic/Latino	26%	29%
White	49%	47%
Multiple	3%	3%
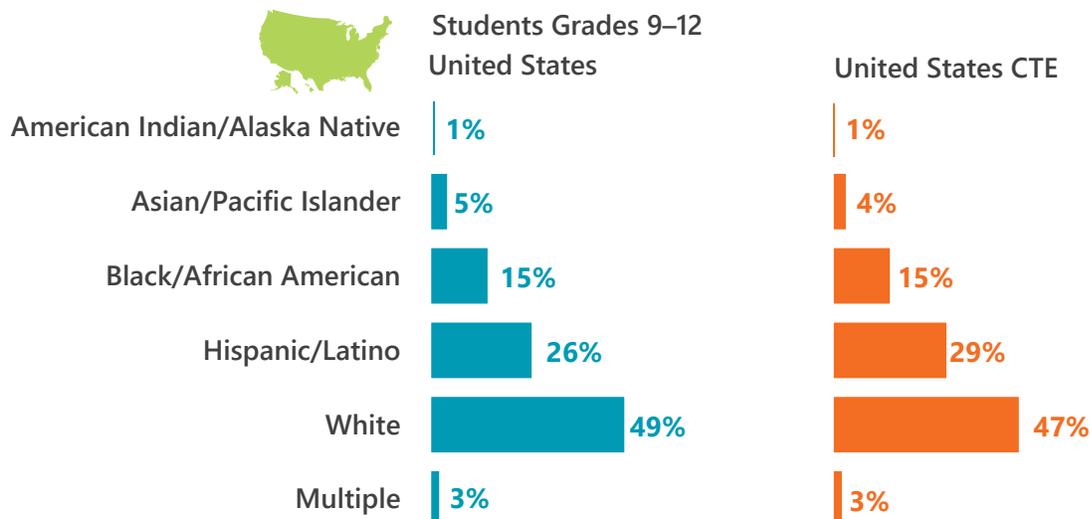
Exhibit E3

In New Hampshire, female students are underrepresented in CTE relative to their proportion statewide.[22]

Students Grades 11–12
New Hampshire

Female 49%

Male 51%

NH CTE

Female 43%

Male 57%
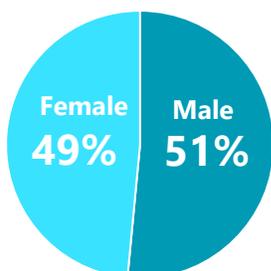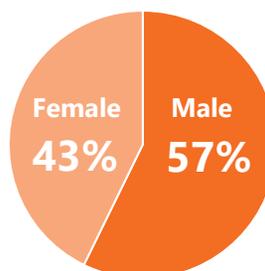
Exhibit E4

In the United States, female students are underrepresented in CTE to a slightly lesser extent than in New Hampshire.[23]

Students Grades 9–12
United States

Female 49%

Male 51%

United States CTE

Female 46%

Male 54%
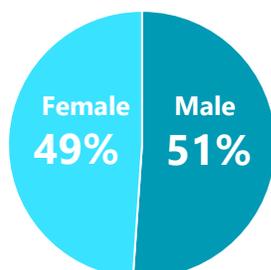
[17]Data for Students in Grades 9–12 in New Hampshire generated using the Elementary/Secondary Information System (ELSi) application from the National Center for Education Statistics; see http://nces.ed.gov/ccd/elsi/.

[18]Data for NH CTE students in 2018–2019 provided by the New Hampshire Department of Education (unpublished).

[19]Percentages might not sum to 100% due to rounding.

[20]Data for Students in Grades 9–12 in the United States generated using ELSi.

[21]Data for U.S. CTE students generated using the Perkins Collaborative Resources Network (PCRN) data explorer application with the following filters applied: Select "CTE Participant Enrollment Data"; State: All; Year: 2018–2019; Education Type: Number of Secondary; Student Populations: Gender, Race/Ethnicity. See https://perkins.ed.gov/pims/DataExplorer/CTEParticipant

[22]Percentages might not sum to 100% due to rounding. Data for New Hampshire students in 2018–2019 provided by the New Hampshire Department of Education (unpublished).

[23]Data for U.S. students generated using the Elementary/Secondary Information System (ELSi) application from the National Center for Education Statistics with the following filters applied: State(s) (All Years): All 50 + DC; see http://nces.ed.gov/ccd/elsi/. Data for U.S. CTE students generated using the PCRN data explorer application from the U.S. Department of Education Office of Career, Technical, and Adult Education Methodology with the following filters applied: Select "CTE Participant Enrollment. See https://perkins.ed.gov/pims/DataExplorer/CTEParticipant

Exhibit E5
New Hampshire students identified with limited English proficiency (LEP) are slightly underrepresented in CTE.[24]

Grades 11–12
New Hampshire

3% of all students

2% of CTE students
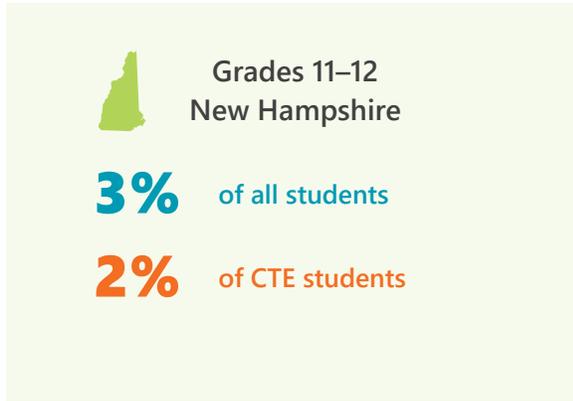
Nationally, students identified as English language learners (ELL) are slightly overrepresented in CTE.[25]

Grades 9–12
United States

6% of all students

7% of CTE students
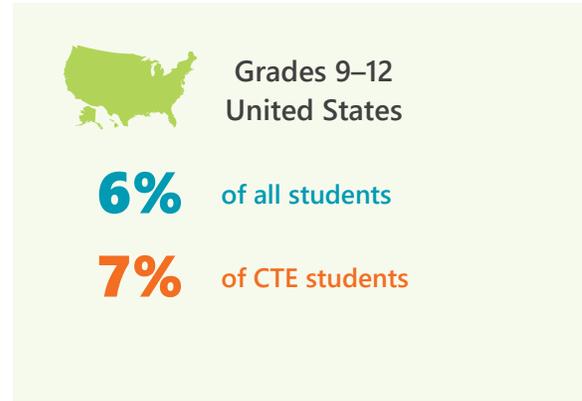
Exhibit E6
New Hampshire students with disabilities are slightly overrepresented in CTE.[12]

Grades 11–12
New Hampshire

15% of all students

16% of CTE students
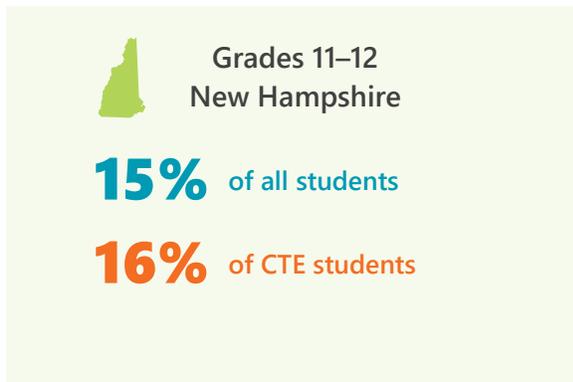
Nationally, students with disabilities are slightly underrepresented in CTE.[26]

All Grades
United States

14% of all students

11% of CTE students

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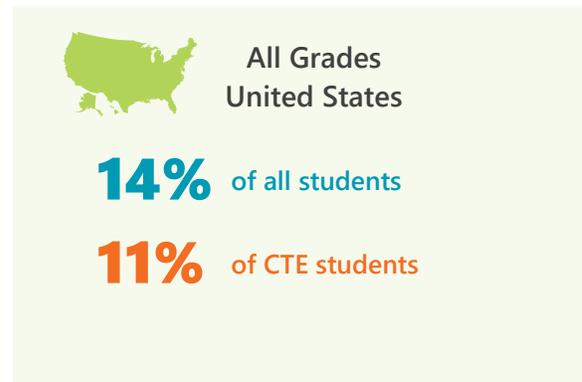
[24]Data for New Hampshire students in 2018–2019 provided by the New Hampshire Department of Education (unpublished).
[25]Data source refers to students as English language learners rather than students with limited English proficiency. Data are from school year 2017–2018, the most recent year for which ELL data for all U.S. students are available from the Digest of Education Statistics; see https://nces.ed.gov/programs/digest/d19/tables/dt19_204.27.asp. Data for ELL students participating in CTE in 2018–2019 generated using the PCRN data explorer application from the U.S. Department of Education Office of Career, Technical, and Adult Education with the following filters applied: Select "CTE Participant Enrollment, LEP. See https://perkins.ed.gov/pims/DataExplorer/CTEParticipant.
[26]National Center for Education Statistics does not report enrollment numbers for students with disabilities by grade level. Data for all U.S. students from the National Center for Education Statistics Condition of Education Report, Students with Disabilities Indicator. https://nces.ed.gov/programs/coe/indicator_cgg.asp. Data for U.S. CTE students generated using the PCRN data explorer application from the U.S. Department of Education Office of Career, Technical, and Adult Education with the following filters applied: Select "CTE Participant Enrollment, Disability Status.

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