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# The Voices of Career and Technical Education Teachers

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A REPORT OF THE AMERICAN FEDERATION OF TEACHERS 2014 SURVEY





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**OUR MISSION**

The **American Federation of Teachers** is a union of professionals that champions fairness; democracy; economic opportunity; and high-quality public education, healthcare and public services for our students, their families and our communities. We are committed to advancing these principles through community engagement, organizing, collective bargaining and political activism, and especially through the work our members do.

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# Foreword by Randi Weingarten

President, American Federation of Teachers

**Pathways in career and technical education are recapturing the nation's interest because of their increasingly powerful potential in preparing young people for the skills they need and the careers that are available in today's global economy.**

Today's career and technical education is not yesterday's vocational education. It provides multiple pathways to high school graduation and higher education, real-world job skills, and internships and apprenticeships that lead to careers. It is a vital component of a 21st-century education system.

Fulfilling the promise of CTE requires the acknowledgement of its potential, adequate support and funding, and real input from those on the frontlines. Teachers—who are real proponents of these pathways—must be heard in the design and implementation of each school's programs and in the growing national conversation.

Our survey asked career and technical educators from across the country about their experiences and challenges. In response, 570 teachers weighed in. They are enthusiastic about the tangible benefits to students and communities from high-quality career and technical education. An Illinois teacher wrote: "CTE classes are a wonderful way to incorporate the core classes into real-life applications that the students can relate to and get excited about." A Florida teacher spoke about CTE engaging potential dropouts. "My program has stopped many at-risk students from dropping out of high school," the teacher wrote. "I just wish we had the funds to properly run the program, rather than all the money being put toward 'testing.'"

Teachers have also identified the challenges that need to be overcome for CTE to be as comprehensive and successful as it can and should be:

- Equipment, technology and instructional resources must be widely available and regularly updated.
- Educators need the time to develop placements (internships, apprenticeships) with employers and connections to the community.
- Class sizes, which are often too large, and learning environments, which are often inadequate, must be appropriate to meeting the needs of all students.
- Program offerings need to be more diverse to engage more students and serve labor-market needs.
- More funding is required to support high-quality CTE programs, especially in economically challenged and isolated urban or rural settings.

The American Federation of Teachers will continue to advocate for increased funding for CTE, through both the Perkins Act and state legislative activity; will work to create appropriate professional development and externship opportunities for teachers; and will seek to partner with businesses, labor organizations, foundations and nonprofits to grow student internships and mentoring opportunities as well as the overall reach and impact of career and technical programs.







## Introduction

Between March 1 and May 5, 2014, the AFT educational issues department conducted an online survey of K-12 CTE teachers who either are members of the AFT or have attended AFT conferences and professional development offerings. The survey sought to learn the range of CTE courses currently being taught, the kinds of CTE partnerships schools are establishing, and educators' views of CTE in preparing students for college and careers. The AFT received 570 survey responses from teachers working in 26 states and the District of Columbia, in 373 different schools. Although the survey was not based on a random sample and is therefore not statistically representative of the nation's CTE educators, it is nonetheless a large and broad survey. Responses came from a diverse group of teachers who teach a wide range of subject areas.

### Survey Respondents by State

State	Number of Responses
Alabama	17
Alaska	1
California	22
Connecticut	24
District of Columbia	2
Florida	108
Iowa	2
Idaho	1
Illinois	56
Kansas	2
Massachusetts	1
Maryland	2
Michigan	25
Minnesota	42

State	Number of Responses
Missouri	23
Montana	34
New Hampshire	8
New Jersey	2
New York	93
New York City	37
Ohio	28
Oklahoma	2
Oregon	2
Pennsylvania	17
Rhode Island	1
Texas	11
Wisconsin	1
West Virginia	6
<b>Total</b>	<b>570</b>



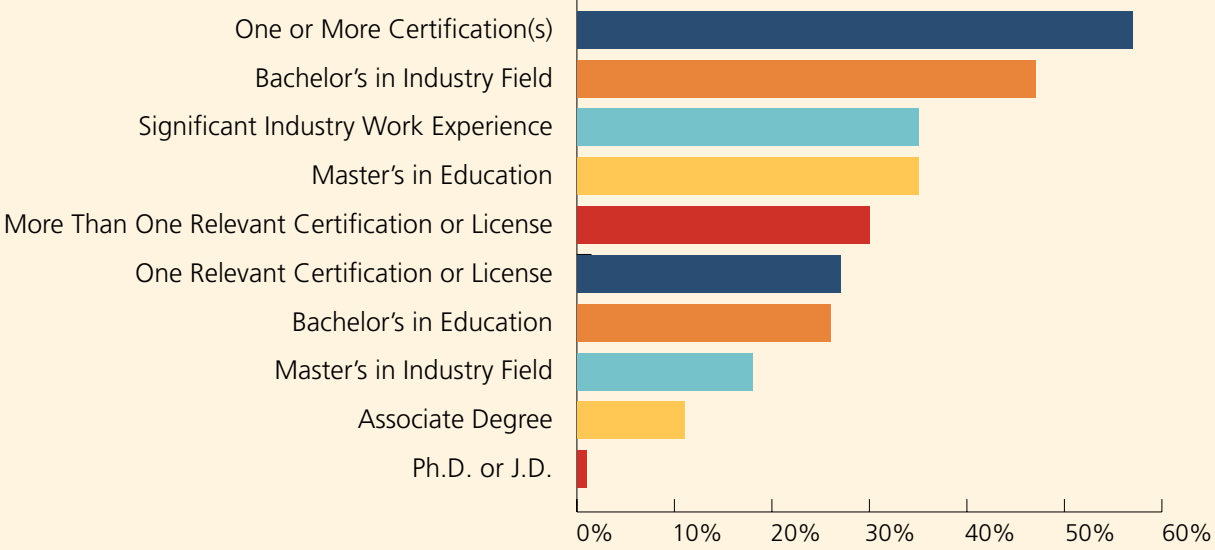
# Teacher Characteristics

Respondents were very well-prepared: Almost 50 percent had a bachelor’s degree in the industry field in which they taught, and more than one-third had significant industry experience, while nearly 60 percent had one or more relevant certifications. Twenty-six percent had a bachelor’s in education (including career and technical education) while 11 percent had an associate degree. Those without education credentials tended to have very specialized industry experience (for example EPA-certified refrigeration technician with 20 years of industry experience, 15 years as a steelworker, millwright, machinist, welder, certified medical lab technician, RN, etc.).

When we look at teacher qualifications by region (where regions correspond to the AFT’s regional administrative structure), they tend to maintain the same breakdown. The major difference between regions is a higher percentage of associate degrees (23 percent) for the Western region versus 11 percent for all respondents, but a lower percent for the Southwest and Mountain region at only 3 percent. Conversely, the Western region had a lower percentage of respondents with a bachelor’s in education (12 percent) versus 26 percent for all respondents. However, these differences might be due to the relatively small number of respondents (25) from the Western region.

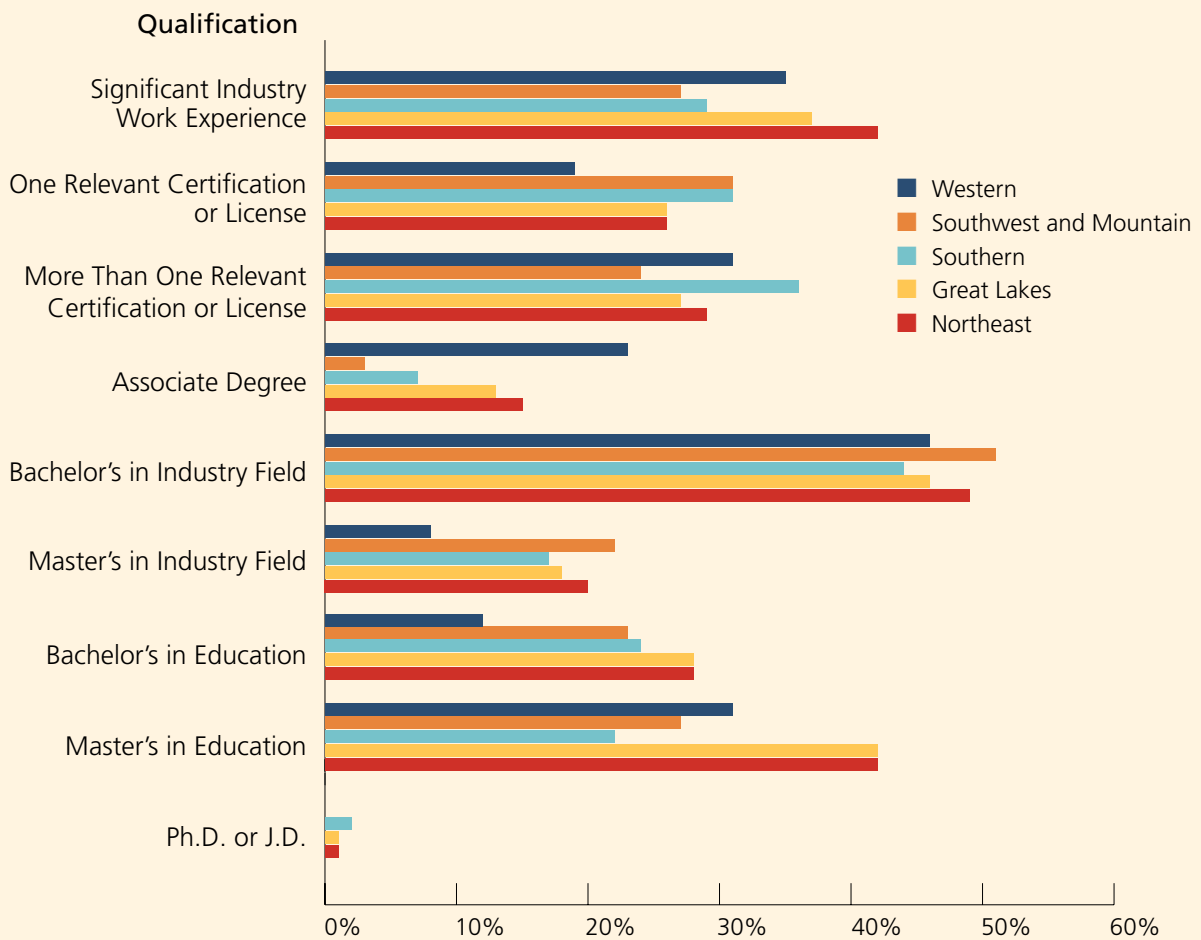
**PERCENT OF RESPONDENTS BY TYPE OF EDUCATION OR EXPERIENCE**

N=570





### PERCENT OF RESPONDENTS WITH SPECIFIC QUALIFICATIONS, BY AFT REGION



Subjects taught varied extensively, with some respondents teaching multiple subjects. The largest number of respondents (91 or 15 percent) taught some kind of business course that included accounting, marketing, finance, entrepreneurship and management. The second-largest subject area was health science at 11 percent, which was primarily nursing, but also included sports medicine and dental assisting. Eight percent of teachers reported teaching various computer applications, followed closely by visual and media arts, a cluster that includes digital media, entertainment and game design. Seven percent taught IT, computer science and electronics, and 6.5 percent of teachers taught core academic subjects such as English, math and biology.

## Subjects Taught by Number and Percentage\*

- 91 (15% of respondents): business, including accounting, marketing, finance, entrepreneurship and management
- 64 (almost 11%): health science (primarily nursing, but also included sports medicine and dental assisting)
- 51 (8%): various computer applications
- 49 visual and media arts, including digital media, entertainment and game design
- 43 (7% ) IT, computer science and electronics
- 40 (7%) family/consumer science
- 37 (6.5%) core academic subjects such as English, mathematics, biology
- 36 (6.3%) culinary arts
- 35 (6.1%) career exploration
- 28 (4.9%) automotive
- 28 (4.9%) construction
- 28 (4.9%) education and early childhood
- 27 (4.7%) architecture and design
- 26 (4.7%) engineering
- 20 (3.5%) justice and law
- 18 (3.2%) agriscience and natural resources
- 17 (3%) industrial arts and shop
- 15 (2.6%) keyboarding (usually in conjunction with specific computer applications and business)
- 11 (1.9%) welding
- 11 (1.9%) cosmetology
- 8 (1.4%) electrical technology
- 7 (1.2%) aviation
- 6 (1.1%) manufacturing
- 6 (1.1%) CTE coordinators/school counselors
- 5 (0.9%) hospitality and tourism
- 3 (0.5%) floristry and landscape
- 3 (0.5%) dance and theater production
- 2 (0.4%) repairs and home maintenance
- 1 (0.2%) special education
- 1 (0.2%) transportation

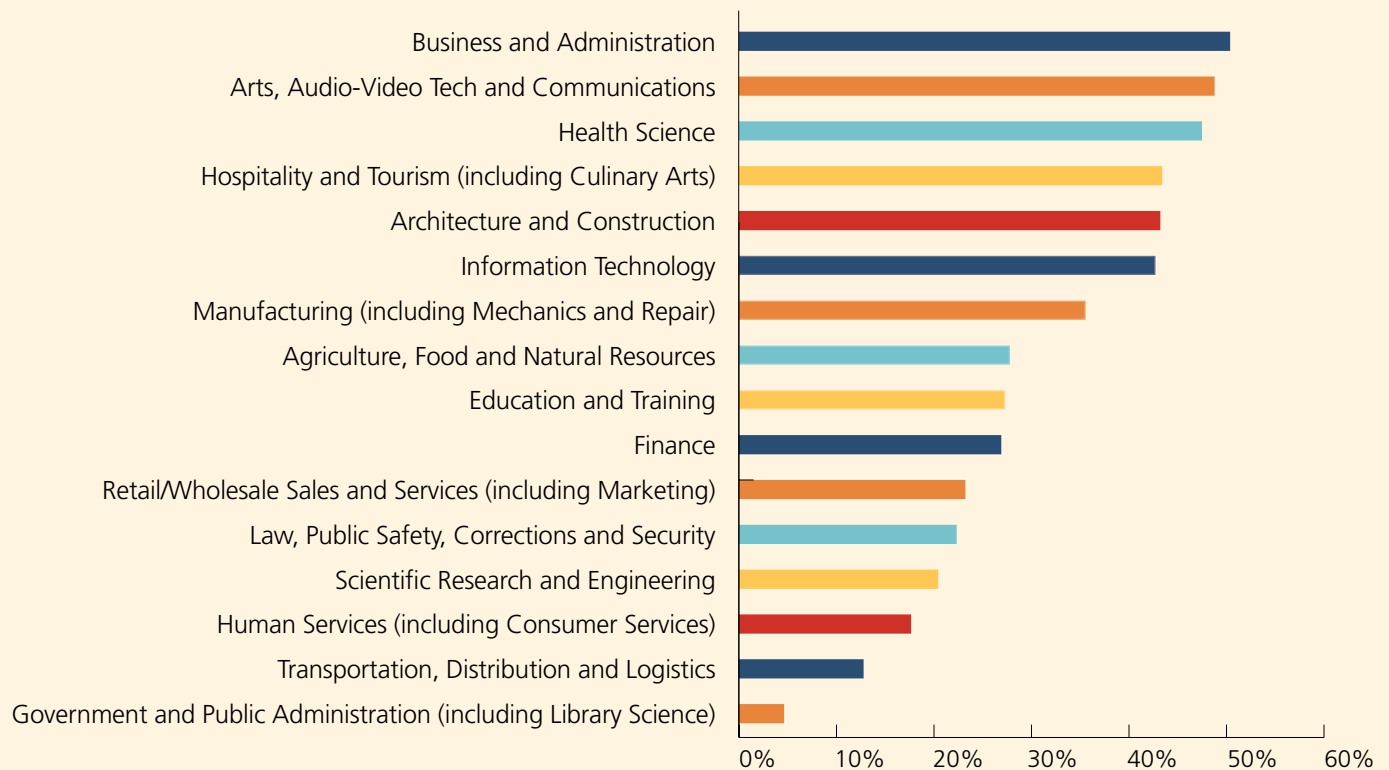
\*Since many respondents teach multiple subjects the total number of courses is over 570

## School and Program Characteristics

Respondents were asked in which of 16 clusters their school offered programs. These clusters were developed by the National Association of State Directors of Career Technical Education Consortium as an organizing framework for programs that are designed to improve pathways to college and career readiness. As research has found, CTE offerings have moved to more technical and design fields. The top six clusters (each with more than 200 survey respondents) were Business and Administration (274); Arts, Audio-Video Technology (265); Health Science (258); Hospitality and Tourism (236); Architecture and Construction (235); and Information Technology (232). The bottom three clusters with fewer than 100 respondents each were Government and Public Administration (25); Transportation, Distribution and Logistics (69); and Human (Consumer) Services (96).

Not all schools are able to offer programs in many areas, however; this is especially true of small schools. “My biggest challenge is being in a small school with limited choices for electives,” one Alabama teacher pointed out. “Most students who are placed in our classes are not there because that is the career path they want but because there are not enough choices for them. That makes the career planning/skills side a little more difficult because of relevance to individual students.”

### CAREER CLUSTERS OFFERED BY SCHOOLS



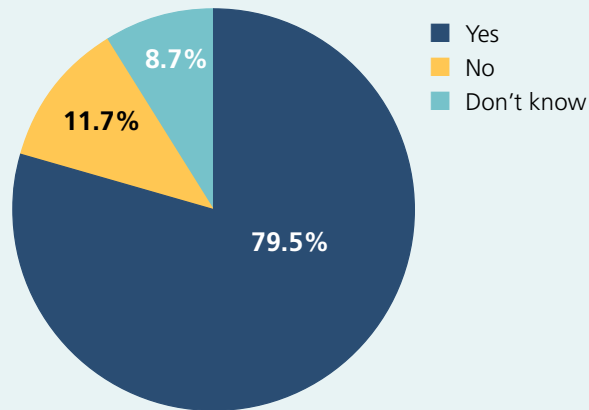


## Connections Beyond the School

The recent emphasis on career pathways and linking CTE to postsecondary education is reflected in a high percentage of respondents—nearly 80 percent—who said there are connections between secondary and postsecondary courses in their programs. Twelve percent reported no connections and 9 percent did not know, but these respondents tended to be middle school CTE teachers.

### CONNECTIONS BETWEEN SECONDARY AND POSTSECONDARY COURSES

N=562



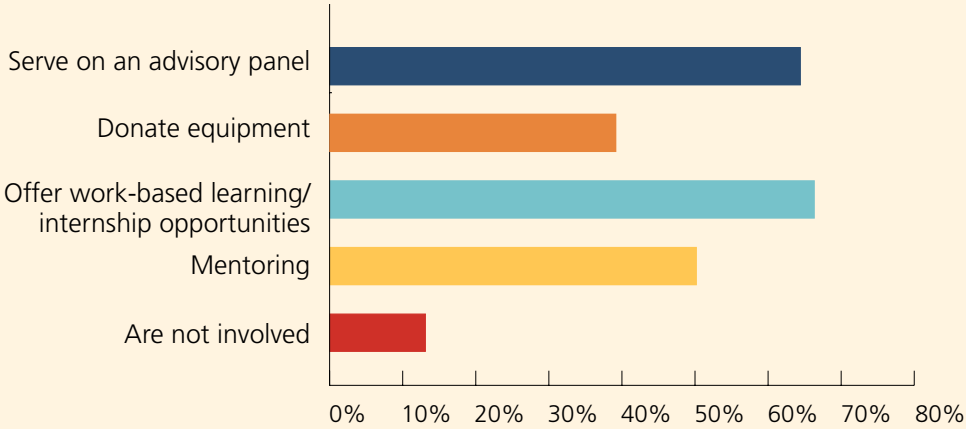
Similarly, with CTE looking to provide students with skills that can be transferred to the labor market, 55 percent of respondents said their programs take local labor market needs into consideration, primarily via business advisory boards (339) and student internships (349). When employers were not involved, teachers tended to have greater difficulty obtaining updated equipment. Fifty percent of respondents said businesses provided mentoring to their students, and close to 40 percent said that businesses had donated equipment. Only 13 percent said businesses were not involved.

The difficulties faced by CTE teachers in rural areas are underscored by a comment from a teacher in Minnesota: “I need to travel 1.5 hours before I can see any businesses that the kids have not already been in” or where they don’t already know the owner. However, even in urban areas, funding challenges limit schools’ ability to offer students work-based learning experiences. “Public transportation on Long Island is inefficient,” reported one New York teacher. “Funds do not support the need for more work-based learning coordinators to handle the heavy load of students.” One Michigan teacher emphasized the difficulties schools face when working with special needs students: “Establishing relationships with businesses in the community has been challenging. We want to offer our students with special needs as much support as they need to participate in vocational programs that will eventually lead to some type of employment and/or independence, but working through the laws and financial limitations has been difficult.”

Only a small number of respondents said local businesses in the area were not involved in their programs, but the teachers often wanted more engagement: “Better connections

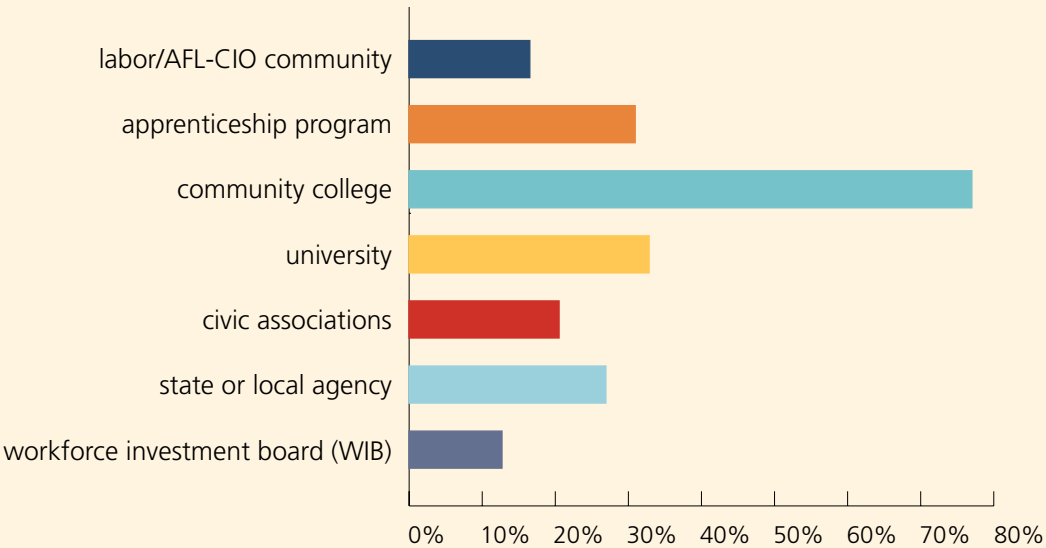
with industry partners [would give us] access to the higher-end technology that is monetarily out of reach,” said one teacher in Alaska. Externships for teachers also were cited as a resource that would assist teachers in their work. But the burden of placing students in internships often falls on teachers, and as one New York teacher reported, there is “not enough time to find placements for each student.”

**EMPLOYER INVOLVEMENT**  
N=527



A total of 422 teachers identified community partners’ involvement in their schools, with the large majority (77 percent) having ties with community colleges, followed by universities (33 percent) and apprenticeships (31 percent). However, as one respondent from Massachusetts explained: “Teachers’ time is at a premium, and it is difficult to maintain community contacts.”

**COMMUNITY PARTNER INVOLVEMENT**  
N=422





## A Sampling of Teacher Voices

### JOYS AND SUCCESSES

Teachers' views about the value of CTE were overwhelmingly positive. As one Ohio teacher observed: "CTE students have a significantly higher graduation rate (93 percent) than students who do not attend CTE (76 percent). We train students to think critically and to problem-solve." Many respondents shared the view expressed by an Illinois teacher: "CTE classes are a wonderful way to incorporate the core classes into real-life applications that the students can relate to and get excited about!"

Teachers' comments were consistent with the multiple goals of CTE programs, preparing students both for college and careers: "CTE programs not only assist our kids with careers but also assist them mature toward college degrees," said a New York City teacher. And comments from a teacher in New York state captured the views of numerous respondents: "Many career paths have numerous jobs that can't be filled through college. Career and technical education fills that gap."

In a similar vein, one Michigan CTE teacher stated: "CTE is an amazing opportunity for students! A lot of programs allow students to leave high school with a certification in their field. All programs give students a lofty head start upon entering college. Students who graduate from a CTE program already know key skills, vocabulary and industry strengths making the transition into postsecondary that much easier. Where else can you get hands-on on-the-job training in addition to your traditional education all for *free*?"

Teachers recognized the value of using an applied learning approach, as a New York teacher explained: "Career and technical education ... is an essential part of a student's academic career. There has to be a balance between theory and practice. High school is all about providing options and opportunities to students. If a student is locked into a straight academic path without access to CTE, then that student is simply not prepared for life after high school. Understanding the realities of the workplace and learning how to apply skills can only improve a student's chance of success after high school."

Other teachers underscored the effectiveness of CTE at engaging at-risk students: "Our programs touch lives in so many ways. I've been teaching since 1996. Many of my former students still use me as a reference on job applications," said a Florida teacher. "My program has stopped many at-risk students from dropping out of high school. I am thankful that I work at a school that recognizes the impact this program has on student lives. I just wish we had the funds to properly run the program, rather than all the money being put toward "testing."

And from a teacher in Michigan: "I have seen CTE classes, and the skills learned in them, change students' lives. They give many unmotivated students a reason to perform better in school, and they give many motivated students access to forms of expression and outlets they wouldn't otherwise have."

Teachers also expressed personal satisfaction when students return to talk about how they have benefitted from their CTE classes. "Students return to say thank you for what we do," noted an Alabama teacher. "Usually they bring a pay stub to show how well they are doing."

And a teacher in Florida said, "A large number of the students I have taught in the past work in the industry of hospitality. My course was the reason they became interested. They come back year after year to remind me. Many of them are chefs, and a few even own their own restaurant."

“I love my job! I love to see the ‘light bulbs’ go on,” said a Pennsylvania teacher. “I watch the students grow and learn their chosen trade. Then, after three years, they pass state boards and are successful in their careers and become productive citizens.”

Other teachers pointed out the value of CTE to their own community. A dental technician instructor in West Virginia said: “Many of my students have gone on to be lab owners, managers and multiple location supervisors, which translates into potential employers.” And a Florida healthcare teacher shared a similar story: “Our practical nursing program is located in an underserved area of town. Most of our students are recent arrivals from other countries. They have difficulty with English and in many cases have limited resources. Our success rate in the nursing boards test is usually above the norm for the state. With this success, our students are able to be productive members of society and in many cases they become role models as the first nurses in their family.”

### FRUSTRATIONS AND CHALLENGES

Teachers’ responses to questions about the challenges they face were open-ended. After all the comments were read, they were assigned to 11 different categories that capture the concerns expressed by all respondents. As can be seen from the following tables, by far the largest percentages of teachers reported that their programs faced challenges related to space/equipment/technology and textbooks (38 percent of all respondents). There were frequent concerns about inadequate equipment, as one California teacher stated: “Our current lab is behind, equipment is becoming obsolete, we need to replace the lab and purchase current software so students are truly prepared for the college courses they pursue.”

This was closely followed by funding concerns (35 percent of all respondents) although this category is closely linked with and often overlaps several other categories. As one New York teacher who cited funding as a challenge noted: “... Offering relevant, industry-approved curriculum requires constant evolution of equipment and resources.” Lack of adequate resources forces teachers to make do. “Funding is always an issue,” said a Florida teacher. “Through a Perkins grant, my district was able to provide me enough Fischertechnik [products] for one class of students. I have three classes currently using the materials and have to juggle the scheduling to accommodate the three classes.”

The partner and community connections category captured the difficulty teachers sometimes encounter trying to establish these connections. For example, geography can be an issue. A Montana teacher pointed out that in small communities it can be difficult to find the wide scope of resources, including internships, apprenticeships, guest speakers, shadowing opportunities, donations, etc., that are needed. And in Illinois, a CTE coordinator reported: “Finding enough corporate work sites willing to take on high school students in the co-op program each year is challenging.”

In the enrollment, student motivation and program offerings category, teachers were faced with programmatic constraints either due to lack of resources or space or to a lack of commitment on the part of both administrators and students. For example, one Ohio teacher reported difficulty in finding students who “understand the need for people to fill manufacturing positions. “

In the class size/staffing category, teachers faced very similar challenges: In Connecticut, a respondent reported that “the state recommends 16 student in a hands-on technology education class. I start the year with 35.” A Florida teacher echoed that sentiment: “It is difficult to spend any quality time with a student or assign meaningful projects when the class sizes are as high as 40 students.”

Teachers face similar challenges in the time or scheduling category: For one Michigan teacher, “lesson plans have turned into a three-hour project on Sunday night.” A New York

teacher lamented that there is “not enough time to find placements for each student.” And a Florida teacher wrote: “I need more planning time to get set up. I spend at least eight extra hours a week getting materials ready for students. This, is in addition to grading, conferences, meetings, clubs, and actual student contact time.”

Professional development issues are often tied to the need to remain up to date on new equipment or software. A Minnesota teacher wants “more current equipment and facilities and instructor training and staff development.”

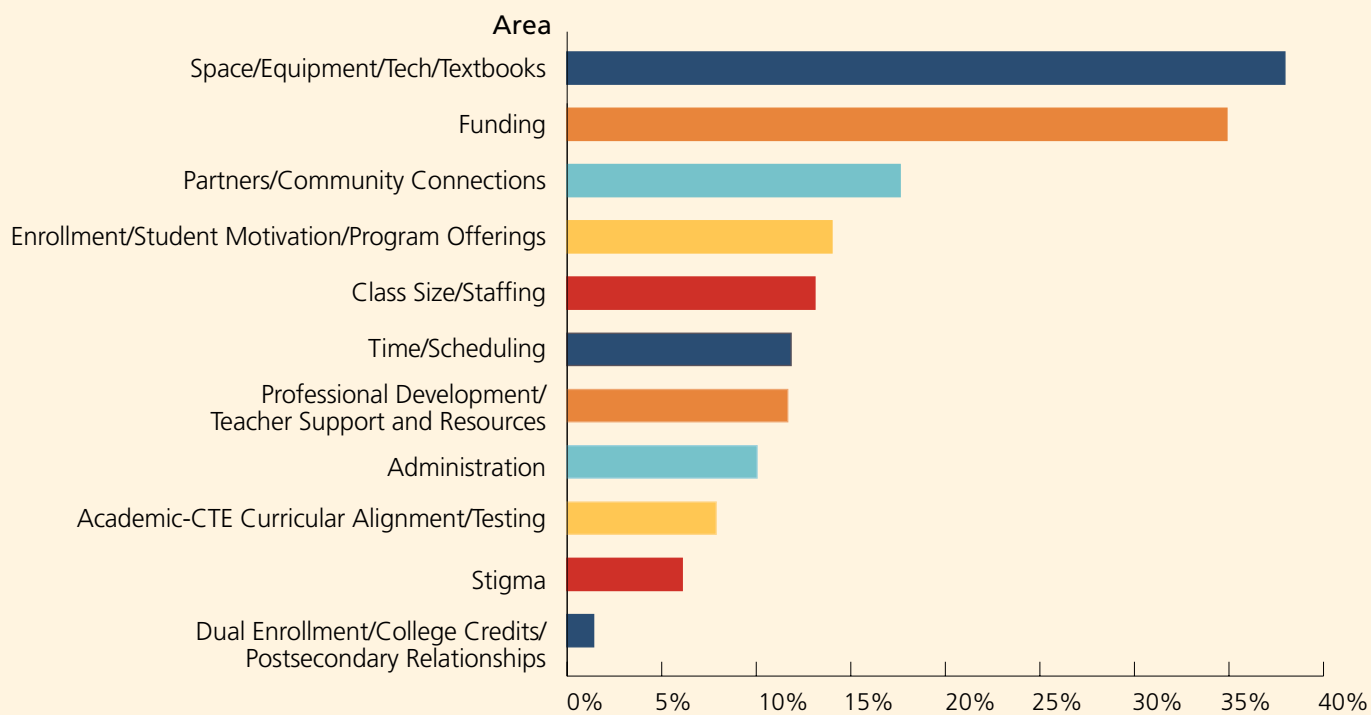
The administration category includes both lack of support and unreasonable expectations. A Michigan teacher’s comment that the administration keeps piling on the work without ever taking anything “off the pile” reflects similar experiences of CTE teachers in other states.

The curricular alignment/testing category included concerns that too much time is taken up by testing: “Unfortunately, with state-mandated exams, such as FCAT and EOCs, many of our students are asked to divide their study time between CTE and the exam, with the exams taking priority over our programs,” said one Florida CTE teacher.

The stigma category captures the negative image academia has bestowed on vocational training, according to a teacher in Ohio. “Counselors do not know the rigorous requirements of modern CTE training. Most people still say that CTE is for people who are not going to college. I hear ‘not everyone is going to go to college so they need something as well.’ This attitude is pervasive in academia and undermines our ability to attract smart, motivated students.” And a New York teacher reflected the view that: “We are told that we are as important as the teachers of core subjects but are not treated that way.”

In the last category, a small number of respondents cited difficulties developing a partnership with postsecondary institutions and offering students dual credit.

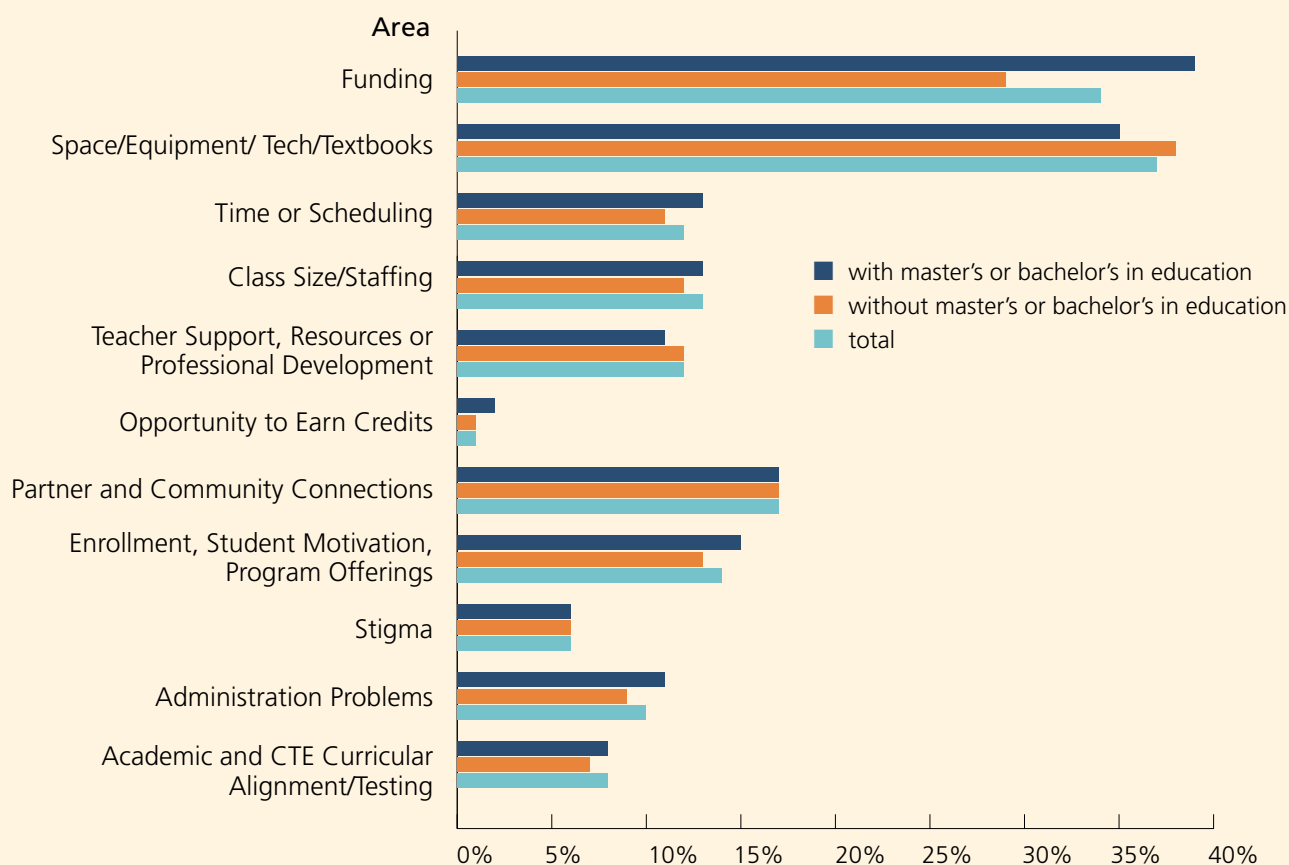
### PERCENT OF ALL RESPONDENTS WHO IDENTIFIED AN AREA AS A CHALLENGE TO THEIR PROGRAM





When we look at teachers with a master's or bachelor's in education versus teachers without these credentials, more teachers who have a master's or bachelor's in education cited funding as a major concern (39 percent). Space, equipment, technology and textbooks came in as a close second (at 35 percent). The frustration that many teachers feel is captured in the comment from a New York teacher: "There is just an amazing amount of potential to link programs with local colleges and also Industry ... if we only had the resources." Rankings for the other categories remained the same, and there were no large differences in the percentages of each subgroup citing a particular category as a challenge.

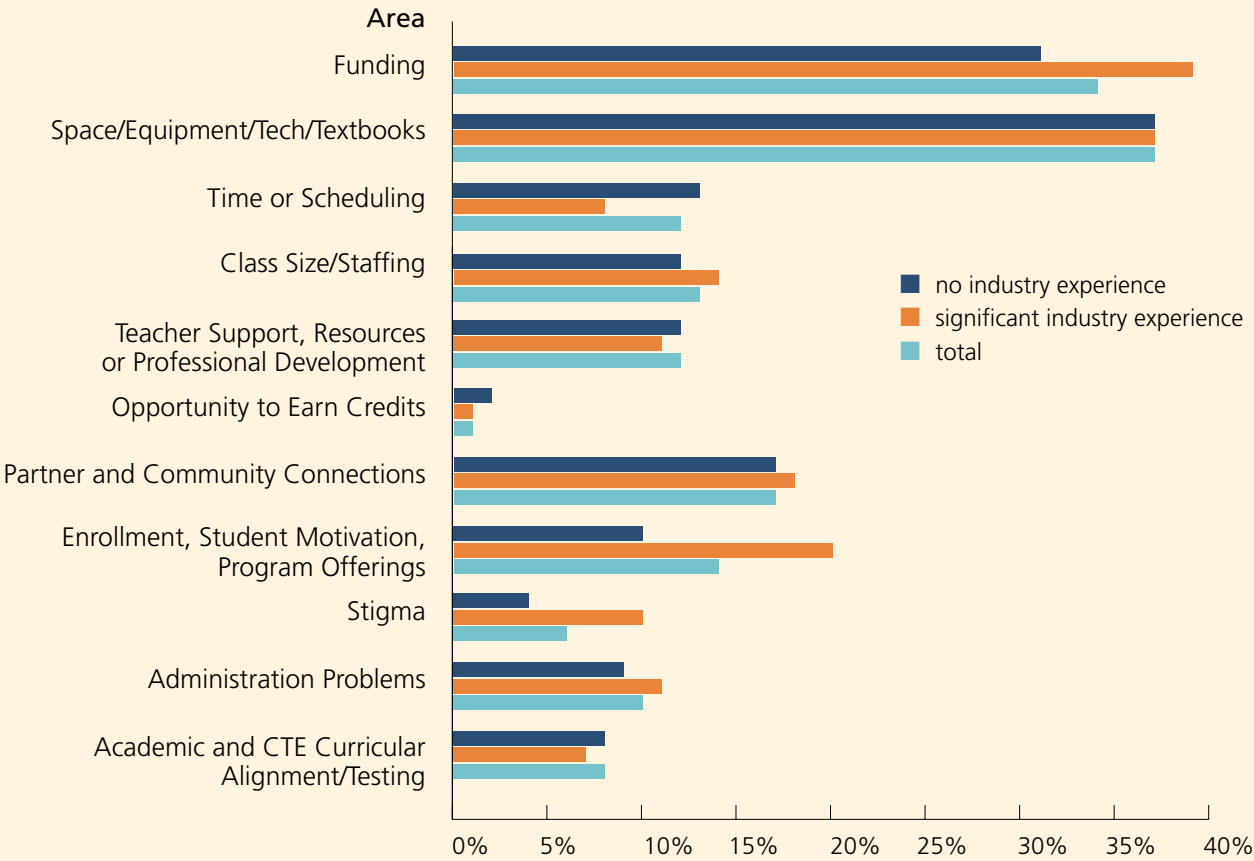
**PERCENT OF RESPONDENTS WHO IDENTIFIED AREA AS CHALLENGE  
(BY EDUCATION DEGREE)**



Similarly, when respondents were broken down by those with significant industry experience versus those without industry experience, funding was more often reported as a challenge (39 percent) followed by space, equipment, technology and textbooks (37 percent). There were also greater differences between the two subgroups in the percentages of teachers with industry experience who reported student motivation and program offerings as a challenge (20 percent versus 10 percent). Teachers with industry experience did not report time and scheduling as much as a challenge (8 percent versus 13 percent for those without significant industry experience, and there was a considerable difference in teachers with

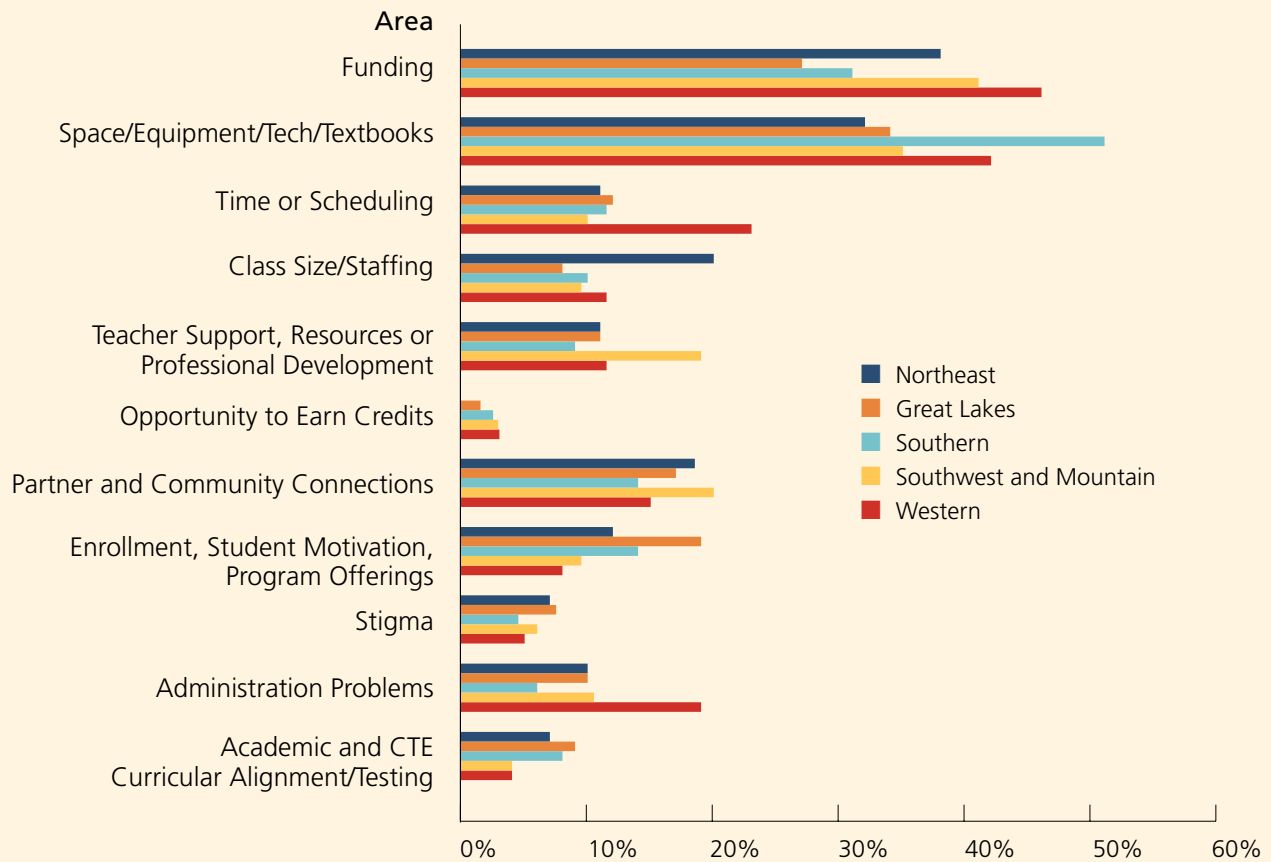
industry experience reporting challenges from the stigma associated with CTE programs (10 percent versus 4 percent for those without industry experience).

**PERCENT OF RESPONDENTS WHO IDENTIFIED AREA AS CHALLENGE  
(BY SIGNIFICANT INDUSTRY EXPERIENCE)**



The challenges reported by teachers were also broken down by region. The largest percentage of CTE teachers to report challenges with space, equipment/technology and textbooks were from the Southern region (at 50 percent), whereas more teachers from the Western region reported funding as a major challenge (46 percent). There were also larger differences between regions in the categories of time and scheduling (cited by 23 percent of respondents from the Western region versus 11 percent for other regions). Other notable differences that arose between regions were for the categories of class size/staffing, teacher support/resources and professional development, and administration problems.

**PERCENT OF RESPONDENTS WHO IDENTIFIED AREA AS CHALLENGE  
(BY AFT REGION)**





## Conclusion

### Moving Forward on Policies and Partnerships

The experiences and views of teachers are essential considerations in crafting intelligent education policies and setting resource priorities. This report contains only a sampling of the wisdom of our CTE teachers; the AFT will continue to seek the input of members involved in career and technical education not only in middle and high schools, but in community colleges as well. The full results of our survey make clear both the enthusiasm of educators and the tangible benefits to students and communities that come from high-quality career and technical education. But equally clear are the challenges that must be met:

- the need for up-to-date equipment, technology and instructional resources;
- the time to develop placements with employers and connections to community;
- the problem of large class sizes and inadequate learning environments;
- the diverse program offerings required to engage more students and serve labor market needs; and
- the financial resources to support it all—especially in economically challenged and sometimes isolated urban and rural settings.

Based on this feedback from teachers, the AFT will continue to advocate for increased funding for CTE, will work to create better professional development and externship opportunities for teachers, and seek partnerships with businesses and labor organizations to extend internships and mentoring opportunities to more students.

It also remains the case that many still have a negative view of CTE, which stems from the old vocational education that was seen as a less-demanding track, teaching outdated skills. But the examples cited by teachers in this survey provide ample evidence that today's revamped CTE programs prepare students for successful careers as well as postsecondary education. Together with teachers, business and community we can use this and other information not only to dismantle any remnants of the old image of CTE, but also to provide supports for teachers and allow many more students to have the opportunities that CTE programs can provide.

Policymakers at all levels would do well to include teachers at the table—whether considering such important federal legislation as reauthorization of the Carl D. Perkins Career and Technical Education Act or making state and local policy and spending decisions that can open up important pathways to careers and postsecondary education options for our youth.

For a multidimensional and in-depth treatment of the CTE debate, there is no more comprehensive resource than the Fall 2014 issue of the *American Educator*. This publication plus other resources on [www.AFT.org](http://www.AFT.org) will help fill in the blanks for anyone interested in this topic.





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