



# THE SkillsUSA ADVANTAGE

How SkillsUSA Is Making Career and Technical  
Education Work Even Better

In Collaboration With



November 2022

## Executive Summary

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Career Technical Education (CTE) offers an opportunity to close the skills gap that threatens U.S. economic growth, offers options to students who question whether they want to pursue a 4-year college degree, and bolsters the workforce readiness of those on the college path. The federal government recognizes nine career and technical student organizations (CTSOs) at the high school level – including SkillsUSA which is the focus of this report.

Using data collected in Fall 2021 from more than 20,000 students in CTE classrooms nationwide, this report suggests CTE works, and it works even better when students are members of SkillsUSA. Specifically, this report compares the likelihood SkillsUSA members and CTSO non-members achieve eight key benefits from CTE: feeling more excited about school; meeting potential employers; getting first-hand work experience; earning a license or certification; connecting school and the real world; understanding the work environment; feeling more excited about their chosen career; and increasing career clarity. SkillsUSA members achieve all eight outcomes at higher rates than CTSO non-members.

The findings make a clear case for expanding access to membership in SkillsUSA. Regardless of gender, race, and school socioeconomics, students are more likely to achieve CTE benefits if they are SkillsUSA members than if they are not CTSO members. This suggests one of the greatest threats to CTE equity may be uneven access to membership in CTSOs like SkillsUSA.

The analysis also shows the magnitude of the SkillsUSA Advantage varies across demographic groups. These variations suggest SkillsUSA may be able to boost its already impressive impact by raising outcome achievement of members in Title I schools, of Black and Hispanic members, and of male members (specifically in relation to their positive feelings about school).

Overall, the results suggest CTE works, and they show CTE works even better when students are members of SkillsUSA.



## INTRODUCTION

This report assesses the advantage associated with SkillsUSA membership among high school students enrolled in Career and Technical Education (CTE) classes. In the current economic climate, the demand for education dollars is high and funding almost always falls short. Every stakeholder needs hard evidence to make tough choices about the value of funding Career and Technical Student Organization (CTSO) memberships for students. This report shows that among students in CTE classes, SkillsUSA members are more likely to benefit from CTE than CTSO non-members are. This pattern, which we label the SkillsUSA Advantage, holds regardless of gender, race/ethnicity, or socioeconomic status.

## CONTEXT

CTE has come a long way over the last half century.<sup>1</sup> CTE has expanded from its original focus on teaching occupation-specific skills to addressing a broader array of goals aimed at preparing students for the dynamic nature of the 21st Century's global economy.<sup>2</sup> It has moved from being specifically focused on vocational education to offering opportunities for anyone interested in integrating workforce experience with academic learning, and bridging high school and the first two years of postsecondary education.<sup>3</sup>

CTE offers educational experiences that take students beyond the classroom. And these learning opportunities may be boosted through membership in CTOSs like SkillsUSA.<sup>4</sup> CTOSs are designed to be integral to classroom instruction.<sup>5</sup> As such, they aim to enrich the basic CTE classroom experience. Four examples of this enrichment are academic and career achievement, leadership development, professional development, and service orientation.<sup>6</sup> Nine CTOSs, including SkillsUSA which is the focus of this report, are currently federally recognized at the high school level.<sup>7</sup>

### Federally Recognized High School-Level CTOSs

- Business Professionals of America (BPA)
- Distributive Education Clubs of America (DECA)
- Educators Rising
- Future Business Leaders of America (FBLA)
- Family, Career and Community Leaders of America (FCCLA)
- Future Health Professionals (HOSA)
- National FFA Organization (FFA)
- SkillsUSA
- Technology Student Association (TSA)

Uneven access to CTOS membership is a potential source of educational inequality.<sup>8</sup> A minority of CTE students are CTOS members – just over 2 million high school students to be precise, representing at most 18.5% of the high school students taking CTE courses during an academic year.<sup>9</sup> Efforts to promote equity through universal access to CTOS membership will require purposeful action and additional resources – both time and money.<sup>10</sup>

Securing these resources requires compelling evidence that CTOS membership matters. The historic learning loss American students suffered after months of pandemic-era education will make the struggle for scarce educational resources even more fierce.<sup>11</sup>



While the case for CTSOs has been made previously,<sup>12</sup> today's environment begs for new, compelling evidence. It may not be enough to point to the declining rate of college-going<sup>13</sup> or even to the rising demand for highly skilled workers.<sup>14</sup> Those may make a case for CTE, but they beg the question of whether CTSO membership takes CTE outcomes to a higher level.

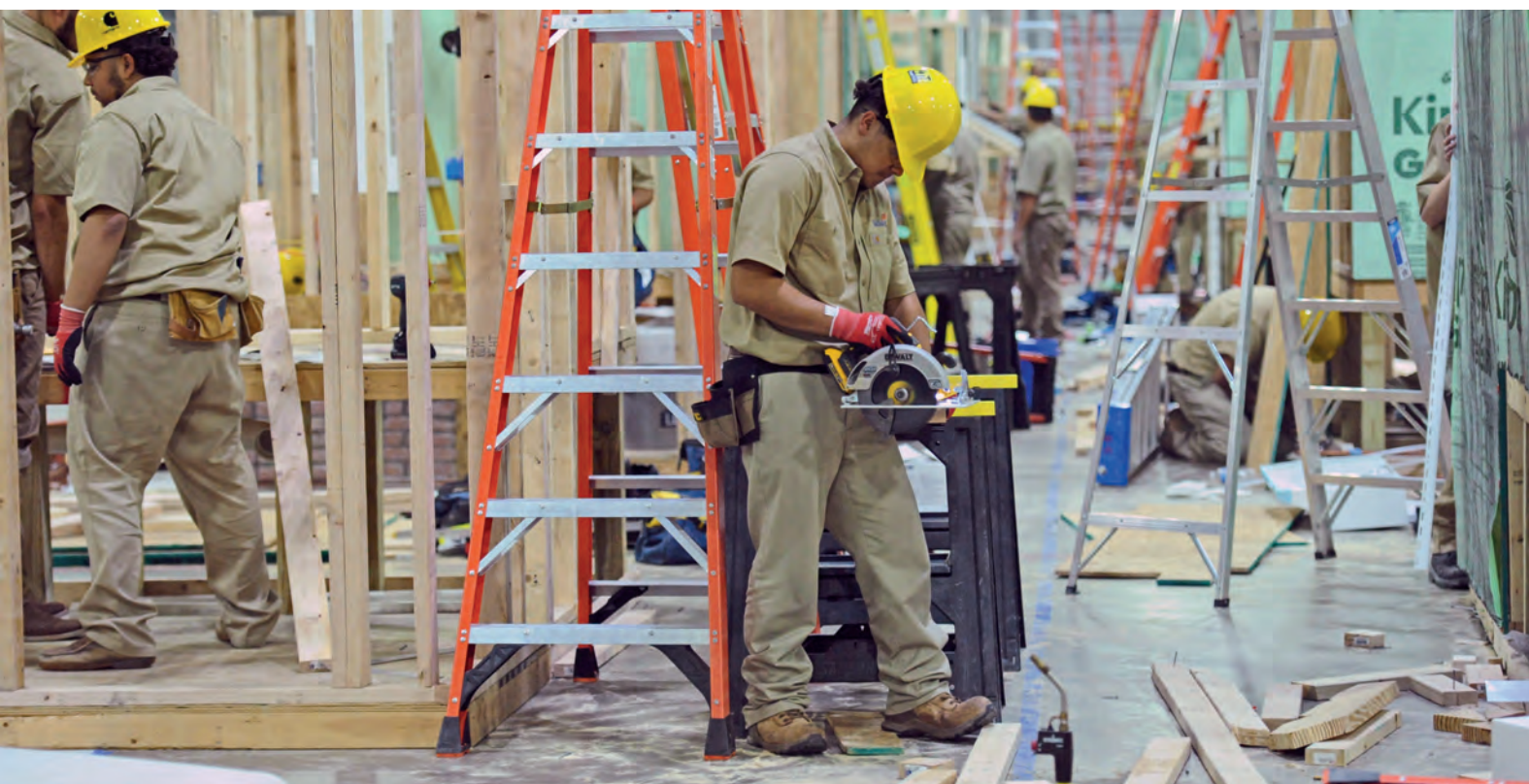
This report meets the need for fresh evidence that speaks directly to the need for CTSOs. It focuses on the impact of SkillsUSA, one of the nine CTSOs recognized at the high school level. This report is noteworthy for several reasons. It is among the first post-pandemic looks at students in CTE classes (i.e., Fall 2021), the sample is nationwide, and it is based on survey responses from a large number of students in high school CTE classes – more than 27,000. This report compares the likelihood SkillsUSA members and CTSO non-members achieve eight key benefits from CTE. (See Appendix A for more details.)

## KEY BENEFITS OF CTE

- Feel more excited about school
- Meet potential employers
- Get first-hand work experience
- Earn a license or certification
- Connect school and the real world
- Understand the work environment
- Feel more excited about your chosen career
- Career clarity

*The SkillsUSA Advantage* is a supplement to *The CTSO Advantage* and designed for the use of SkillsUSA. The results show:

- SkillsUSA members outperform CTSO non-members in achieving all eight outcomes.
- The SkillsUSA Advantage persists across gender, race, and school socioeconomics.
- The Advantage varies across demographic groups, suggesting greater equity may boost impact.



## The Benefits of CTE

This report focuses on eight benefits students in CTE classes – whether members of SkillsUSA or not – might be expected to achieve. Many benefits could have been a focus, as a quick review of the existing literature would show.<sup>15</sup> The eight benefits that are the focus of this analysis were selected in collaboration with partners participating in the Research Consortium on CTE Career Pathways. SRF drew on the lead partners' collective, practical knowledge of CTE to formulate a list of benefits, broadly writ, that all CTE students could (and should) achieve from CTE.

*The eight benefits fall into two groups for analysis.*<sup>16</sup>

- First, seven **General Outcomes** are used to assess the benefits reported by students across the four graduating classes in the sample of high school students. The General Outcomes measure whether students feel CTE helped them: feel more excited about school; meet potential employers; get first-hand work experience; earn a license or certification; connect school and the real world; understand the work environment; and feel more excited about their chosen career. Students who achieve an outcome respond CTE helped “a great deal” or “some.”
- Second, **Career Clarity** rounds out the set of eight outcomes. Its achievement is analyzed solely for Seniors. To reflect different schools of thought about CTE, two different measures are used. One measure (PERSISTENCE) defines career clarity as achieved if the student intends to pursue a career in their CTE field. Another measure (DIRECTION) treats career clarity as achieved if the student intends to pursue a career in their CTE field (i.e., achieve PERSISTENCE) or (absent that) feels CTE has provided them with a clearer sense of their career direction.<sup>17</sup>

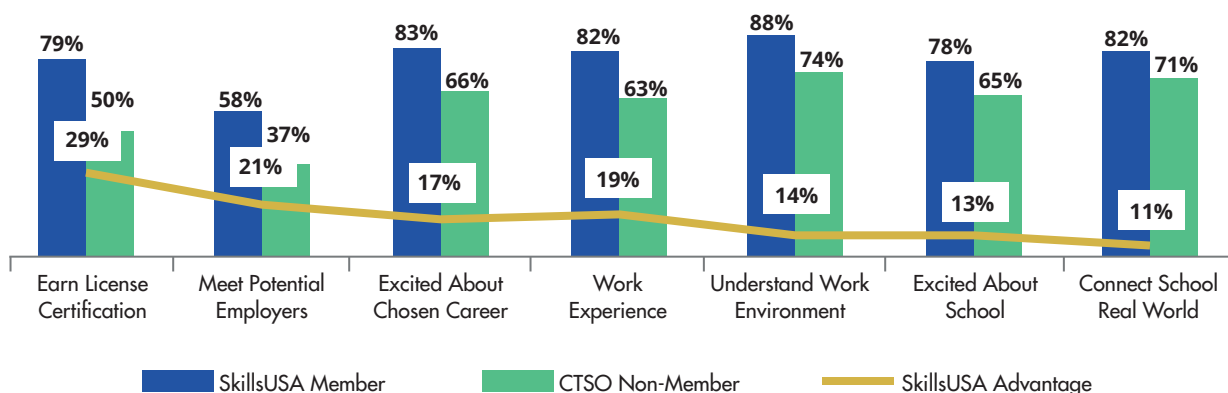
The SkillsUSA Advantage is computed by subtracting the percentage of *CTSO non-members* achieving the outcome from the percentage of *SkillsUSA members* achieving the outcome. As would be expected, the SkillsUSA Advantage varies across measures. (See Appendix B for question wording.) Students who are CTSO members, but not members of SkillsUSA, are excluded from the analysis.

### Is there a SkillsUSA Advantage?

Yes. Whether the focus is **General Outcomes** across graduating classes or **Career Clarity** solely among Seniors, SkillsUSA members are more likely than CTSO non-members to achieve each of the eight CTE outcomes.<sup>18</sup> (For more details about measures and question wording, consult Appendix A and Appendix B.) This holds whether the SkillsUSA Advantage is based on averages across outcomes or achievement of specific outcomes.

**General Outcomes.** CTE works especially well when CTE students are SkillsUSA members. The SkillsUSA Advantage illustrates that point vividly. The maximum SkillsUSA Advantage of 29 points (benefiting from CTE by earning certifications and licenses) is only the beginning. (Exhibit 1)

### Exhibit 1: SkillsUSA Members Are More Likely than CTSO Non-Members to Achieve the Seven General Outcomes



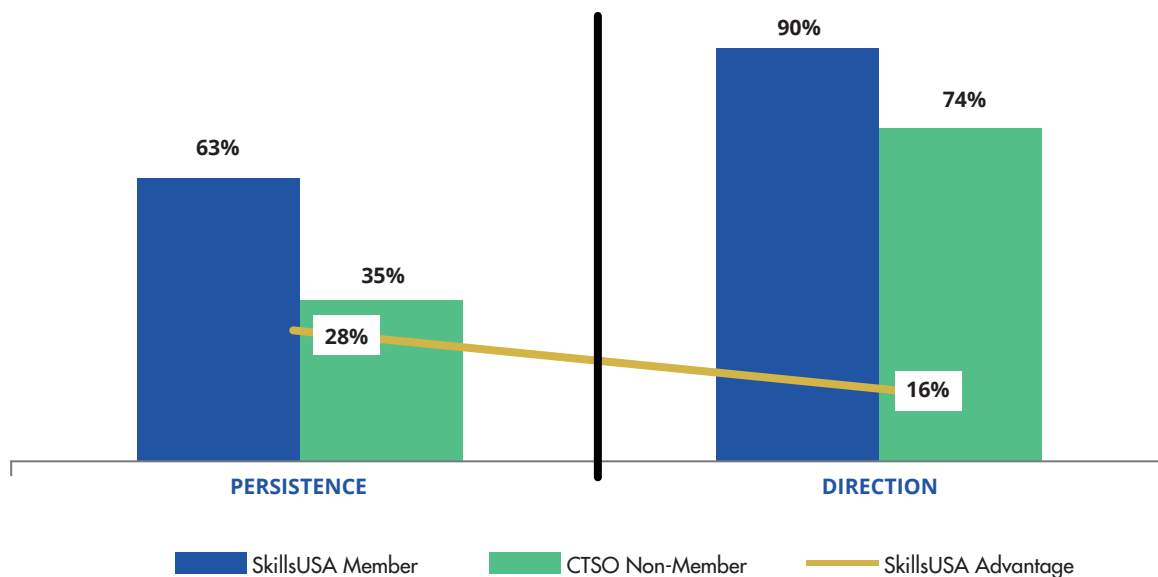
The SkillsUSA Advantage is consistently in the double-digit range for the remaining General Outcomes associated with CTE: meeting potential employers, getting first-hand work experience, being excited about their future career, understanding the work environment, being excited about school, and seeing the connection between school and the real world. The results show CTE works, but it works even better (often much better) when combined with SkillsUSA membership.<sup>19</sup>

**Career Clarity.** Achievement of the eighth outcome, Career Clarity, is assessed only for high school Seniors. Achieving this outcome is urgent for high school seniors, who are about to move on to their next steps.

Whether Career Clarity is measured as PERSISTENCE or DIRECTION, the SkillsUSA Advantage is strong. (For details about operationalizations and question wording, see Appendix A and Appendix B.) On PERSISTENCE, the SkillsUSA Advantage is 28 points, with 63% of SkillsUSA Seniors, compared with only 35% of Seniors who are CTSO non-members, intending to pursue a career in their CTE field. (See Exhibit 2) We cannot be sure of the reasons for the gap, but one plausible explanation is that SkillsUSA members get an extra boost in building occupational identity via social and cultural capital – connecting students with employers, helping students earn credentials, and leaving students on average exceptionally likely to be excited about their future careers. That boost may encourage students to persist in their field. This, however, requires further research.

If we broaden the standard of success to DIRECTION, it gets a bit more complicated. The expanded definition of Career Clarity means more Seniors, SkillsUSA members and CTSO non-members, achieve the outcome (90% vs. 74%, respectively). While a looser standard allows relatively more CTSO non-members to achieve the Career Clarity outcome, a SkillsUSA Advantage still remains – 16 points.<sup>20</sup>

## Exhibit 2: SkillsUSA Members Are More Likely to Achieve the Career Clarity Outcome, No Matter How It Is Measured



Regardless of how Career Clarity is gauged, the conclusion is the same: CTE works, and it works even better when combined with SkillsUSA membership.



**Summary.** The analysis shows SkillsUSA members achieve the eight CTE outcomes at higher rates than CTE students who are CTSO non-members. On its face, that trend raises questions about equity since the majority of CTE students are not members of CTSOs – much less members of SkillsUSA. But there is a nagging question: Would SkillsUSA membership have the same benefits if more CTE students had an opportunity to join CTSOs?

### Demographic Differences and the SkillsUSA Advantage

To explore this question, the remainder of the report focuses on a simple question: Is the SkillsUSA Advantage comparable across demographic groups? To answer the question, we compare the SkillsUSA Advantage among students who differ in gender, race/ethnicity, and community socioeconomic status.

The results of the analysis show that while some groups benefit more than others, the data are impressively consistent: Students who are SkillsUSA members are more likely to achieve these CTE outcomes than CTSO non-members. That suggests:

- Increased access to SkillsUSA membership has potential to boost achievement of CTE benefits.
- Even if access does not increase, SkillsUSA may boost its impact by making gains on equity.

### Gender and the SkillsUSA Advantage

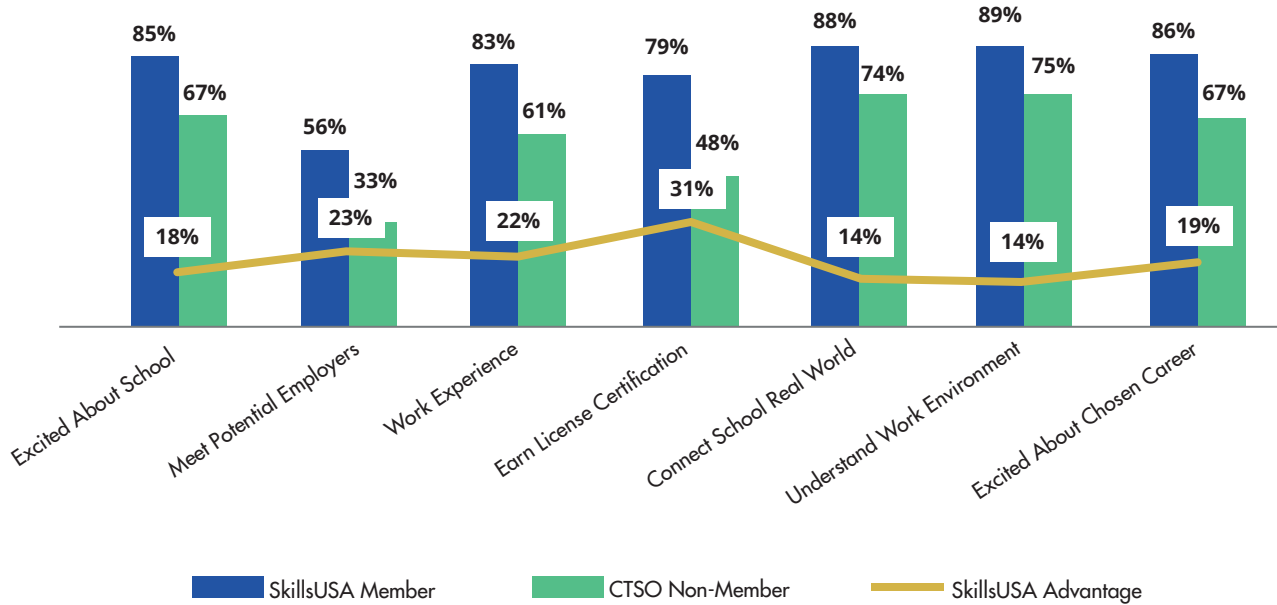
CTE has struggled historically with gender equity.<sup>21</sup> *The CTSO Advantage*, a companion piece to this report that compares the outcomes of CTE education for CTSO members and non-members, concluded that CTSO membership provides comparable benefits to girls and boys who are CTSO members. This report echoes that conclusion – and suggests the SkillsUSA experience may narrow some gaps that might have existed in the past.

**General Outcomes.** SkillsUSA members – regardless of gender – show consistent and notably greater likelihood than CTSO non-members of achieving all seven General Outcomes. Regardless of gender or outcome, the SkillsUSA Advantage is in the double digits. (Exhibit 3)

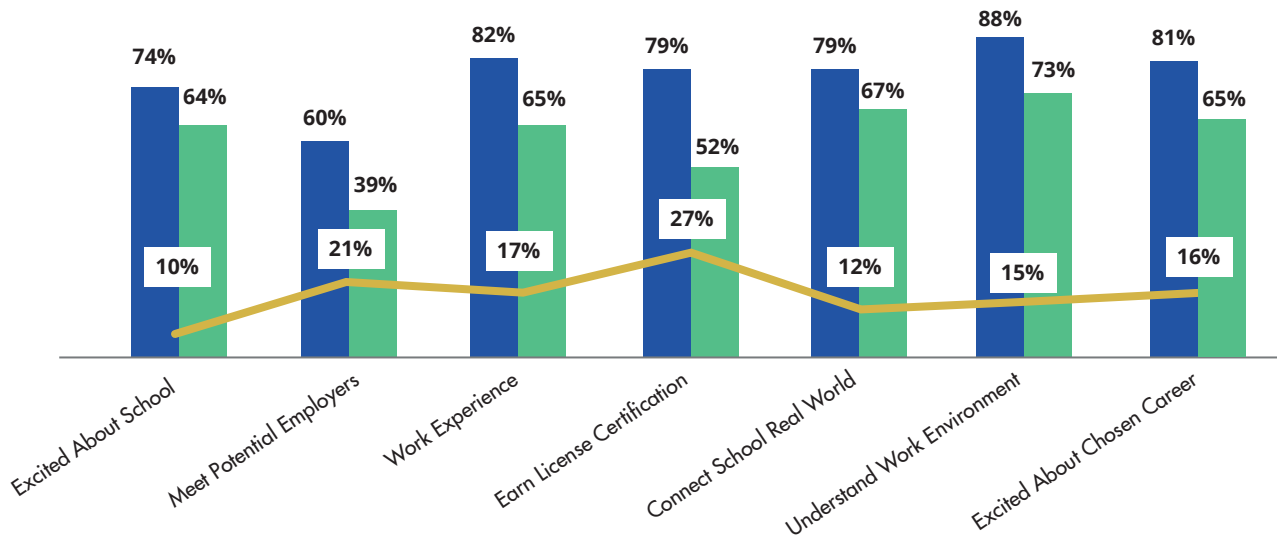


### Exhibit 3: Regardless of Gender, CTSO Members are More Likely than Non-Members to Achieve the General Outcomes

#### FEMALE STUDENTS



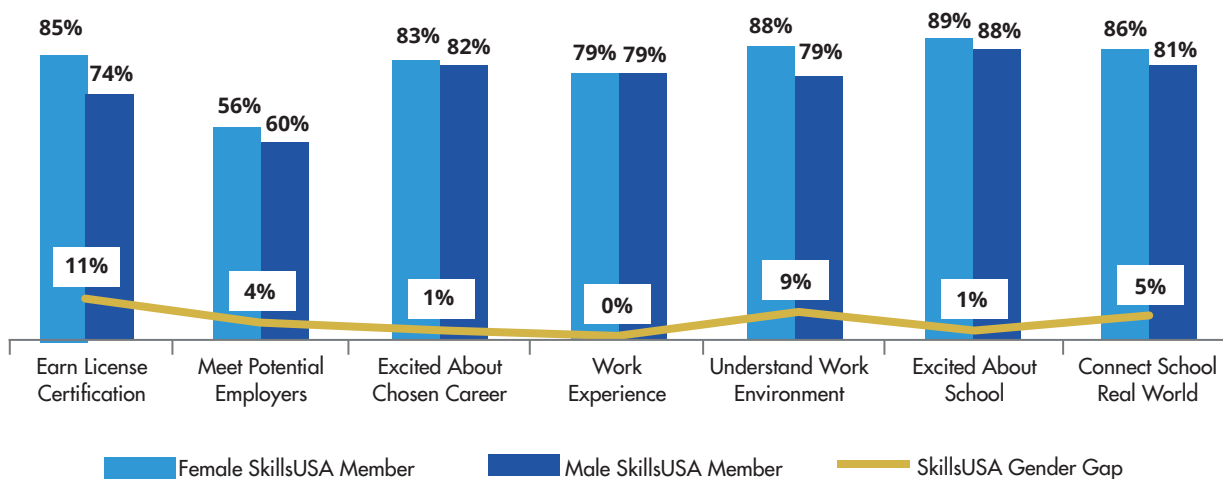
#### MALE STUDENTS





However, SkillsUSA members share one common gender difference. Despite a SkillsUSA Advantage for boys and girls on school-related measures (i.e., excitement about school and connecting school with the real world), male members of SkillsUSA lag female members in achieving these CTE outcomes.<sup>22</sup> (This gender gap is not the result of SkillsUSA experiences, for it occurs among CTSO non-members as well.) Creating interventions that help boys close the gap with girls relating to CTE's impact on the relevance of school could boost the benefits they take from their high school education – and from SkillsUSA membership.

#### Exhibit 4: Gender Gaps among SkillsUSA Members Are Greatest on School-Related Outcomes



**Career Clarity.** Looking first at PERSISTENCE – the intention to pursue a career in their CTE field of study, the SkillsUSA Advantage is 27 points for girls and 29 points for boys. (Exhibit 5) This is a good indicator that increased opportunities to become SkillsUSA members would have equitable benefits for boys and girls who join.

As expected, when the measure of Career Clarity shifts from PERSISTENCE to DIRECTION, two things happen. First, more students – SkillsUSA members and CTSO non-members – achieve the outcome. Second, the SkillsUSA Advantage shrinks but remains in the double digits – 14 points among girls and 17 points among boys. So, no matter how Career Clarity is operationalized, SkillsUSA membership is associated with similarly large boosts in outcome achievement for boys and girls. These results hold promise that expanding SkillsUSA membership access to more students, regardless of gender, could boost CTE outcomes.

#### Exhibit 5: When It Comes to Achievement of the Career Clarity Outcome, the SkillsUSA Advantage Is Substantial Regardless of Gender

Seniors Only	Females			Males		
CAREER CLARITY	CTSO Non-Member	SkillsUSA Member	SkillsUSA Advantage	CTSO Non-Member	SkillsUSA Member	SkillsUSA Advantage
PERSISTENCE	33%	60%	27%	35%	64%	29%
DIRECTION	76%	90%	14%	72%	89%	17%

## The Intersection of Race and Gender

Thus far, the analysis has shown SkillsUSA members are more likely than CTSO non-members to benefit from CTE regardless of gender. But there is no guarantee that will hold across all racial and ethnic groups. Evidence it does makes a stronger case for expanding access to CTSO membership in general, and SkillsUSA membership in particular.

Historically,<sup>23</sup> gender has been experienced differently across racial/ ethnic groups. The analysis that follows focuses on gender differences among the three groups with adequate cases for analysis: Black students, Hispanic students, and White students.<sup>24</sup> While we find the six groups created by the intersection of race/ethnicity with gender share much in common when it comes to the SkillsUSA Advantage in achieving CTE outcomes, important differences do emerge.<sup>25</sup>

**General Outcomes.** With six demographic groups created by the intersection of race/ethnicity and gender, and with each of those six groups having scores on the seven measures that comprise the General Outcomes, reporting can get confusing quickly. To simplify, we begin by focusing on the average SkillsUSA Advantage across the seven outcomes for each of the six demographic groups. That boils down what otherwise could be an overwhelmingly complex picture created by 42 scores to a more manageable starting point of six.

### Exhibit 6: Average SkillsUSA Advantage by Gender and Race/Ethnicity

	Females: Average SkillsUSA Advantage	Males: Average SkillsUSA Advantage
Black	13%	11%
Hispanic	18%	14%
White	24%	20%

Across the six demographic groups, the average SkillsUSA Advantage is positive and in the double-digit range. That means SkillsUSA members in each demographic group are more likely than CTSO non-members to achieve the General Outcomes. But the magnitude of the average SkillsUSA Advantage varies across the groups, ranging from 11 points among Black males to 24 points among White females. The 11-point average SkillsUSA Advantage among Black males means SkillsUSA members in this segment are about 11 percentage points more likely than CTSO non-members to achieve the seven CTE benefits we classify as General Outcomes. Similarly, the 24-point average SkillsUSA Advantage among White females means White females are about 24 points more likely to achieve the seven General Outcomes when they are SkillsUSA members than when they are CTSO non-members.

While SkillsUSA membership is associated with greater likelihood of achieving CTE benefits across all demographic groups, the variations in the average SkillsUSA Advantage should not be ignored. Those differences across average scores belie differences on individual scores. On six of seven measures the SkillsUSA Advantage is greater for White students than Black or Hispanic students regardless of gender. The sole exception is benefits from meeting potential employers – which is roughly similar across the six groups. (See Exhibit 7)

The results are encouraging – yet beg for further research to shape new interventions to boost SkillsUSA’s impact through increased equity.

- The case is clear for expanding access to membership in SkillsUSA. Across demographic groups, students are more likely to achieve CTE benefits if they are SkillsUSA members than if they are not CTSO members.

- The results also suggest SkillsUSA may be able to boost its already impressive impact by raising the outcome achievement of Black and Hispanic members to a level on par with that of White members.

But the data only show racial/ethnic differences in likelihood that CTE students achieve the outcomes. They do not explain why these gaps exist. For that, further research will be needed. The changing demographics of the U.S. student population and workforce make understanding the causes and remedies for such gaps critical to future success – educational and economic.

## Exhibit 7: Outcome Achievement Rates and SkillsUSA Advantage by Membership Status, Gender, and Race/Ethnicity

GENERAL OUTCOMES	Race/Ethnicity	Females			Males		
		SkillsUSA Member	CTSO Non-Member	SkillsUSA Advantage	SkillsUSA Member	CTSO Non-Member	SkillsUSA Advantage
<b>Excited About School</b>	Black	78%	64%	14%	63%	57%	6%
	Hispanic	83%	70%	13%	72%	66%	6%
	White	88%	67%	21%	79%	65%	14%
<b>Meet Potential Employers</b>	Black	59%	38%	21%	57%	38%	19%
	Hispanic	60%	37%	23%	64%	41%	23%
	White	51%	29%	22%	59%	37%	22%
<b>Work Experience</b>	Black	76%	61%	15%	75%	61%	14%
	Hispanic	84%	63%	21%	80%	67%	13%
	White	88%	60%	28%	85%	66%	19%
<b>Earn License Certification</b>	Black	69%	53%	16%	73%	53%	20%
	Hispanic	82%	52%	30%	78%	56%	22%
	White	80%	43%	37%	80%	51%	29%
<b>Connect School Real World</b>	Black	85%	74%	11%	69%	65%	4%
	Hispanic	86%	76%	10%	77%	68%	9%
	White	92%	74%	18%	83%	68%	15%
<b>Understand Work Environment</b>	Black	83%	78%	5%	82%	71%	11%
	Hispanic	89%	78%	11%	87%	76%	11%
	White	92%	74%	18%	90%	73%	17%
<b>Excited About Chosen Career</b>	Black	83%	71%	12%	68%	64%	4%
	Hispanic	84%	69%	15%	84%	68%	16%
	White	86%	64%	22%	84%	63%	21%

**Career Clarity.** After breaking the analysis down by race/ethnicity, gender, and graduating class (since Career Clarity is assessed only for Seniors), only two racial/ethnic groups have adequate cases for analysis: White students and Hispanic students.



Regardless of how Career Clarity is measured, the results show:

- The SkillsUSA Advantage is strong and consistent for both groups – solidly in the double-digits.
- The racial/ethnic differences in the SkillsUSA Advantage scores on Career Clarity are small.

As students approach graduation, the majority of SkillsUSA members intend to continue in their CTE field. This contrasts with CTSO non-members, and it is reflected in the SkillsUSA Advantage on PERSISTENCE. White and Hispanic SkillsUSA members appear much more likely to be on their way to graduating with skills and training directly applicable to the career pathway they hope to pursue than CTSO non-members are. (See Exhibit 8)

The same pattern appears when we analyze DIRECTION scores. Combining those who hope to continue in their CTE field with those who do not but nevertheless feel they have a clearer sense of direction, the data show: 1) a majority of CTE students in both groups achieve the outcome, and 2) the SkillsUSA Advantage continues in the double-digit range (although smaller than when PERSISTENCE is the measure). So, with this more general measure of Career Clarity, the data suggest CTE works, and it works even better for SkillsUSA members.

## Exhibit 8: Career Clarity Outcome Achievement and SkillsUSA Advantage by Membership Status, Gender, and Race/Ethnicity

Seniors Only		Females			Males		
Career Clarity	Race/Ethnicity	SkillsUSA Member	CTSO Non-Member	SkillsUSA Advantage	SkillsUSA Member	CTSO Non-Member	SkillsUSA Advantage
<b>PERSISTENCE</b>	Hispanic	64%	31%	32%	65%	36%	29%
	White	67%	33%	34%	71%	36%	34%
<b>DIRECTION</b>	Hispanic	88%	76%	12%	92%	74%	18%
	White	90%	75%	15%	91%	71%	20%

### The SkillsUSA Advantage and Socioeconomic Status (SES)

Title I schools have a high percentage of students from low-income families.<sup>26</sup> The Title I program provides additional resources to these schools to help narrow the funding gap with more affluent schools. No assessment of SkillsUSA's impact would be complete without a comparison of outcomes in schools eligible for Title I funding and more affluent schools.

Whether the focus is achievement of the seven General Outcomes across the high school years or Career Clarity solely among high school Seniors:

- SkillsUSA membership is associated with a higher likelihood of achieving outcomes, but
- The boost associated with SkillsUSA membership is greater in more affluent schools.

Universal access to SkillsUSA membership holds promise of boosting outcomes for CTE students. Yet even without CTE students having greater access to CTSO membership, SkillsUSA could boost its impact overall by strengthening achievement of outcomes among its members in Title I schools.

**General Outcomes.** SkillsUSA membership is associated with a boost in achievement of the seven General Outcomes. This holds in both Title I and non-Title I schools. These two trends suggest universal access to CTSO membership could give CTE students a better chance of achieving these seven General Outcomes. (Exhibit 9)

However, universal access does not guarantee equity. The boost associated with SkillsUSA membership is not equal across school types. Students in affluent schools benefit more. This is evident in the average SkillsUSA Advantage of Title I vs. Non Title I schools. It also comes through in consistently lower achievement of the individual outcomes in Title I schools. Interventions that boost outcome achievement in Title I schools could raise the overall impact of SkillsUSA.

## Exhibit 9: Achievement of General Outcomes and SkillsUSA Advantage by Membership Status and Title I Status of School

CTE Benefits Achieved	Not Title I			Title I		
	SkillsUSA Member	CTSO Non-Member	SkillsUSA Advantage	SkillsUSA Member	CTSO Non-Member	SkillsUSA Advantage
Excited About School	84%	66%	18%	71%	64%	8%
Meet Potential Employers	61%	36%	25%	55%	36%	19%
Work Experience	86%	63%	23%	77%	63%	14%
Earn License Certification	82%	49%	33%	75%	50%	25%
Connect School Real World	86%	71%	15%	77%	70%	7%
Understand Work Environment	91%	74%	17%	85%	73%	12%
Excited about Chosen Career	87%	66%	21%	77%	65%	12%
AVG Gap			22%			14%

**Career Clarity Outcomes.** Whether measured by intention to pursue a career in their CTE field, or a greater sense of direction: (Exhibit 10)

- The SkillsUSA Advantage is positive and in the double-digit range regardless of Title I status.
- The SkillsUSA Advantage is consistently greater in schools that do not qualify for Title I status.
- SkillsUSA members in Title I schools are strikingly less likely to pursue careers in their CTE fields.

## Exhibit 10: Achievement of Career Clarity Outcomes and SkillsUSA Advantage Score for Students in Title I and Not Title I Schools

Seniors Only	Not Title I			Title I		
Career Clarity Benefits	SkillsUSA Member	CTSO Non-Member	SkillsUSA Advantage	SkillsUSA Member	CTSO Non-Member	SkillsUSA Advantage
PERSISTENCE	71%	36%	35%	48%	34%	14%
DIRECTION	93%	74%	18%	86%	73%	13%

**Summary.** Whether students in CTE classes attend Title I schools or not, CTE students who are SkillsUSA members are more likely to achieve these CTE benefits than CTSO non-members are. At the same time, SkillsUSA has much to gain by helping students in Title I schools get as much from their SkillsUSA membership as those in more affluent schools do.

The reason students in Title I schools appear to benefit less from SkillsUSA membership than those in more affluent schools is not clear from the available data. Unraveling this mystery is important and requires further exploration.

## CONCLUSION

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CTE offers an opportunity to close the skills gap that threatens U.S. economic growth, offers options to students who question whether they want to pursue a four-year college degree, and bolsters the workforce readiness of those on the college path. Our analyses suggest CTE works, *and* it works even better when students are members of SkillsUSA.

Data from more than 20,000 students in CTE classrooms nationwide show a SkillsUSA Advantage exists. On all eight outcomes, membership in SkillsUSA is associated with a greater likelihood of achieving the eight benefits of CTE. **This suggests one of the greatest threats to CTE equity may be uneven access to membership in CTSOs.** The SkillsUSA Advantage is observed across a variety of demographic groups, suggesting that if access to CTSOs were expanded, it could benefit a wide range of students.

The analysis also suggests there are additional ways to leverage SkillsUSA membership to increase benefits of CTE. They focus on three areas.

- **Gender.** SkillsUSA helps all students achieve the eight CTE benefits. However, even among SkillsUSA members, fewer boys than girls say CTE helped them connect school with the real world or be more excited about school. Closing these gaps could elevate the impact of CTE.
- **Race x Gender.** All six demographic groups analyzed are more likely to report benefiting from CTE when they are members of SkillsUSA. But the SkillsUSA Advantage is greatest among White students. Understanding the roots of this gap and closing it can boost the impact of SkillsUSA.
- **Socioeconomic Status.** The SkillsUSA Advantage is consistent and sizeable regardless of Title I status. But the SkillsUSA Advantage is consistently weaker in Title I schools. Understanding the cause of the gap and shaping ways to close it will elevate the impact of CTE and SkillsUSA.

The challenges facing the nation's education system are complex and daunting. The implications for the national economy are grave. Bolstering CTSOs will not solve all our problems, but the ability to leverage the infrastructure they offer, building on strategies associated with achievement of critical outcomes, is a promising step toward success.



## Appendix A: Research Methods

This report is among the first post-pandemic studies of the impact of CTSO membership on CTE students and the first to examine SkillsUSA's members post-pandemic. Students completed in-class surveys during Fall 2021. The sample is not only national in scope, but among the largest in such evaluations (27,686 high school students in CTE classes). The sample includes an ample number of CTSO non-members (n=19,001) and a solid subgroup of SkillsUSA members for comparison (n=1,603). This report excludes from analysis those CTE students who were CTSO members, but not members of SkillsUSA (n=4,904).<sup>27</sup> (For a comparison of CTSO members and non-members see [The CTSO Advantage](#).)

**CTE Benefits/Outcomes.** Previous research has measured the added value of CTSO membership in various ways – sometimes in CTSO-specific ways and other times with a more general focus on CTE benefits.<sup>28</sup> This report targets eight general benefits all CTE students should achieve. These benefits were determined in collaboration with members of the Research Consortium on CTE Career Pathways. SRF drew on the 2017 lead partners' collective, practical knowledge of CTE to formulate a list of benefits, broadly writ, that all CTE students could (and often should) achieve from CTE. "The SkillsUSA Advantage" is calculated for all eight outcomes individually, and it is the difference between the percentage of SkillsUSA members and CTSO non-members who qualify as achieving a given outcome.<sup>29</sup>

The analysis takes a two-step approach.

**Step One:** This step calculates the SkillsUSA Advantage using responses of *all CTE students* to seven items tapping academic engagement, workforce social and cultural capital, and career self-efficacy.<sup>30</sup> (See Appendix B for question wording.) Students who say CTE benefited them in a specific way "a great deal" or "some" are defined as achieving the outcome (aka benefiting).

**Step Two:** This step *focuses solely on Seniors* (Class of 2022) and achievement of the Career Clarity outcome. Seniors (unlike younger students) must be prepared for postsecondary life. Career Clarity is important for making choices about further education or employment. The first, and most specific, measure of Career Clarity focuses on persistence in their CTE field. Do students intend to pursue a career in their CTE field?<sup>31</sup> The second measure taps their sense of career direction through responses to two questions. With this second measure, students can achieve Career Clarity either by intending to pursue a career in their CTE field or (absent that) saying CTE benefited them "a great deal" or "some" in developing a clearer sense of their career pathway. (See Appendix B for question wording.) For both measures, the SkillsUSA Advantage is the difference between the proportion of SkillsUSA members and CTSO non-members who achieve the outcome.

**SkillsUSA Members.** Students were given a list of the nine high school level CTSOs. They were asked to indicate whether they were members of any and mark those to which they belonged. If students were members of SkillsUSA, they were defined as SkillsUSA members – even in the rare circumstances when they were also a member of another CTSO. If they indicated they did not belong to a CTSO, they were defined as not a CTSO member. All others – those who marked no response or were members of other CTSOs – were excluded from analysis in this report. (See Appendix B for question wording.) For analysis comparing all CTSO members (including SkillsUSA) with non-members of CTSOs see [The CTSO Advantage](#).

**Gender.** Students were given two choices: female or male. Those who marked both or none were excluded from analyses that focused on gender differences, but these respondents were included in other analyses that did not use the gender variable. (See Appendix B for question wording.)

**Race.** Students were given the opportunity to select up to four groups with which they identified. The three Hispanic options listed on the survey were combined for analysis purposes, and those respondents who identified with at least one were identified as Hispanic. The dataset had sufficient cases to allow some subgroup analyses of Asian, Black, Hispanic, and White respondents.<sup>32</sup> Groups with too few cases, or individuals who did not opt to respond, were excluded from analyses involving race and ethnicity, but were included in all others. (See Appendix B for question wording.)

**Socioeconomic Status.** Although SES was not available at the individual level, measures reflecting the SES of the school, the district, and the students' zip codes were available through other data sources. This report uses the Title I status of the school, with all Title I or Title I-eligible schools being considered "Title I" and non-eligible schools as "Not Title I." The school's Title I designation was determined from the NCES databases of School Characteristics, 2019-2020.



## Appendix B: Question Wording

### **PERSISTENCE IS MEASURED USING THIS QUESTION:**

Do you plan to pursue a career in the career & technical field you are studying? (Select ONE)

- Yes
- No
- Not Sure

### **DIRECTION IS MEASURED USING A COMBINATION OF THESE QUESTIONS**

Do you plan to pursue a career in the career & technical field you are studying? (Select ONE)

- Yes
- No
- Not Sure

How much has CTE helped you develop clearer sense of your career pathway? (Select ONE)

- 1: Not at all
- 2: Very little
- 3: Some
- 4: A great deal

### **GENERAL OUTCOMES are based on the following and are achieved if "A Great Deal" or "Some" is chosen.**

How much has CTE helped you: (Select ONE in each row)

- 1: Not at all
- 2: Very little
- 3: Some
- 4: A great deal

- Feel more excited about school
- Meet potential employers
- Get first-hand work experience
- Earn a license or certification
- Connect school and the real world
- Understand the work environment
- Feel more excited about your chosen career

**CTSO Membership Status:** SkillsUSA members marked SkillsUSA to indicated membership. CTSO Non-members indicated that they were not currently members of a CTSO. The question was:

Are you currently a member of any career technical student organization (CTSO)? (Select ALL that apply)

- BPA
- Educators Rising
- FCCLA
- National FFA Organization
- TSA
- DECA
- FBLA
- HOSA
- SkillsUSA
- I am not a current CTSO member



*Seniors* indicated their graduation year was 2022

HS Graduation Year: 2022 2023 2024 2025 2026

**RACE/ETHNICITY** was based on responses given to the following question. Note that Hispanics chose Latin American / So. or Central American/ Hispanic; Mexican or Mexican American; or Puerto Rican

You may be eligible for a grant or a loan based on your ethnic/racial background. (Select up to FOUR)

- American Indian / Alaskan Native
- Asian / Asian American / Pacific Islander
- Black/ African American / Caribbean
- Latin American / So. or Central American/ Hispanic
- Mexican or Mexican American
- Middle Eastern
- Puerto Rican
- White / Caucasian
- Prefer not to respond



## Appendix C: Demographics

27,686 high school students in CTE classes responded to this survey. The following tables profile respondents on key demographics.

**Table 1:  
STUDENT GENDER**

Female	Male	No Response	Total
47.1%	46.1%	6.8%	100.0%

**Table 2:  
STUDENT RACE/ETHNICITY IDENTITIES CHOSEN**

Asian	Black	Hispanic	Middle Eastern	Native American	White	No Response/ Prefer Not to Say
5.5%	20.5%	29.5%	2.5%	10.1%	55.7%	5.5%

\*Multiple Race/Ethnicity responses allowed. See Table 3.

**Table 3:  
NUMBER OF STUDENT RACIAL OR ETHNIC IDENTITIES CHOSEN**

None	One	Two	Three	Four	Total**
10.8%	68.1%	15.0%	3.7%	2.4%	100.0%

\*\*Multiple Race/Ethnicity responses allowed. See Table 2 for Student Race/Ethnicity Percentages.

**Table 4:  
STUDENT GRADUATION YEAR**

2022	2023	2024	2025	Total
27.8%	29.5%	25.7%	17.0%	100%

**Table 5:  
STUDENTS' SCHOOL TITLE 1 STATUS**

Not Title 1	Title 1 Eligible	Total
35.5%	64.5%	100.0%

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<sup>1</sup> <https://www.aypf.org/blog/42-years-of-cte-policy-progress-and-lingering-challenges/>

<sup>2</sup> <https://www.aypf.org/blog/42-years-of-cte-policy-progress-and-lingering-challenges/>

<sup>3</sup> <https://www.aypf.org/blog/42-years-of-cte-policy-progress-and-lingering-challenges/>;  
<https://www.aypf.org/wp-content/uploads/2013/04/CCRS-CTE-Primer-2013.pdf>

<sup>4</sup> ACTE, 2011. Expanding Career Development through Career and Technical Student Organizations: pg.1.

<sup>5</sup> <https://www.skillsusa.org/wp-content/uploads/2014/06/GuidetoPerkins.pdf>;  
[https://cte.careertech.org/sites/default/files/files/resources/CTSO\\_Career\\_Readiness.pdf](https://cte.careertech.org/sites/default/files/files/resources/CTSO_Career_Readiness.pdf)

<sup>6</sup> ACTE, 2011. Expanding Career Development through Career and Technical Student Organizations.

<sup>7</sup> CTSOs are authorized by Congress under the authority of the Carl D. Perkins Act.

<sup>8</sup> Some assert they do without reservation. (See ACTE, 2011. Expanding Career Development through Career and Technical Student Organizations.) Other studies have drawn more nuanced conclusions. (See National Research Center for Career and Technical Education. [2007] "Looking inside the Black Box"; also see Steven R. Aragon, Corinne Alfeld, and David M. Hansen (2013) "Benefits of Career and Technical Student Organizations' on Female and Racial Minority Students' Psychosocial and Achievement Outcomes," Career and Technical Education Research, 38(2), DOI: 10.5328/cter38.2.105, pp. 105-124 ). Claims that CTSOs add value to the CTE experience are frequently made. While some claims are not evidence-based, those that are data supported are often open to question given their reliance on small samples, sampling methods that invite cherry-picking the best students, or studies of a single CTSO that may not be generalizable to others. For a comprehensive summary of the evidence collected prior to 2011 see ACTE (2011), Expanding Career Development through Career and Technical Student Organizations. For a different perspective see <https://www.the74million.org/article/when-co-curriculars-spark-careers-over-80-years-how-career-and-technical-student-organizations-have-evolved-from-bricklaying-to-business-management-to-robotics/>.

<sup>9</sup> This estimate of high school level CTSO membership is computed by the author and is the upper estimate based on data from three sources: see <https://nces.ed.gov/surveys/ctes/tables/index.asp?LEVEL=SECONDARY> That 10,965,000 HS students take CTE courses, <https://www.ctsos.org/ctsos-2/>, and <https://www.aeseducation.com/blog/career-technical-student-organization-ctso>. The lower estimate from these sources is 15.7%.

<sup>10</sup> <https://www.the74million.org/article/when-co-curriculars-spark-careers-over-80-years-how-career-and-technical-student-organizations-have-evolved-from-bricklaying-to-business-management-to-robotics/>. For some districts the issue will be money – money for memberships, money for teachers, money for transportation if the CTSO is an after-school offering. While in-school-time CTSO activities can make it easier for students dependent on bussing to participate, this may also force a hard choice between subjects which are associated with standardized tests and CTSO's cocurricular activities.

<sup>11</sup> See <https://www.nationsreportcard.gov/highlights/ltr/2022/>

<sup>12</sup> See ACTE, 2011. Expanding Career Development through Career and Technical Student Organizations; National Research Center for Career and Technical Education. [2007] "Looking inside the Black Box"; Steven R. Aragon, Corinne Alfeld, and David M. Hansen (2013) "Benefits of Career and Technical Student Organizations' on Female and Racial Minority Students' Psychosocial and Achievement Outcomes," Career and Technical Education Research, 38(2), DOI: 10.5328/cter38.2.105, pp. 105-124.

<sup>13</sup> <https://www.insidehighered.com/news/2022/01/07/fewer-high-school-graduates-enroll-college>



<sup>14</sup> <https://smallbusiness.chron.com/skilled-labor-vs-unskilled-labor-46154.html>

<sup>15</sup> See for example: ACTE, 2011. Expanding Career Development through Career and Technical Student Organizations; National Research Center for Career and Technical Education. [2007] "Looking inside the Black Box"; Steven R. Aragon, Corinne Alfeld, and David M. Hansen (2013) "Benefits of Career and Technical Student Organizations' on Female and Racial Minority Students' Psychosocial and Achievement Outcomes," Career and Technical Education Research, 38(2), DOI: 10.5328/cter38.2.105, pp. 105-124.

<sup>16</sup> No claim is made that the eight are comprehensive of all the benefits that could be achieved in CTE. It also excludes those benefits that are uniquely tailor to the mandate of CTSOs – and thus are unlikely to be achieved by CTSO non-members taking CTE classes. Finally, our measures do not require CTSO members to disentangle how the outcome was achieved – specifically that it was achieved in a CTE course or a CTSO activity.

<sup>17</sup> Those who achieve the outcome based on career clarity indicated CTE helped "a great deal" or "some" achieve a greater sense of their career direction.

<sup>18</sup> The data do not allow us to establish why the difference exists. One plausible explanation is that membership in CTSOs affects the quality of the CTE experience. If that is the case, then denying students access to CTSO membership may equal denying them access to a higher quality CTE experience. Other possibilities exist which, unfortunately cannot be tested: high achievers are more likely to join, CTSO members are more likely to come from higher quality CTE programs.

<sup>19</sup> The value representing the Advantage fails to fully convey the magnitude of that advantage. The simple difference between members and non-members is generally concentrated among those responding "a great deal." (Data not presented here.) So that means that when students feel they have benefited from CTE, a larger proportion of members than non-members feel they have benefited "a great deal." The intensity difference should not be underestimated.

<sup>20</sup> The question is whether one measure of Career Clarity is more valuable over time.

<sup>21</sup> This is true particularly when it comes to addressing gender segregation in the workforce. Indeed, hard won gains to fund positions that would encourage students to consider non-traditional fields of study were lost in the Perkins reauthorization completed in 1998. For a detailed discussion of the history of the struggle for gender equity in CTE see Mary E. Lufkin, Mary Wiberg, Courtney Reed Jenkins, Stefanie Lee Berardi, Terri Boyer, Ellen Eardley, Jan Huss. (2007) "Gender Equity in Career and Technical Education" in Handbook for Achieving Gender Equity Through Education, edited by Susan S. Klein, Barbara Richardson, Dolores A. Grayson, Lynn H. Fox, Cheris Kramarae, Diane S. Pollard, Carol Anne Dwyer.

<sup>22</sup> The other pattern of gender difference that disadvantaged girls in The CTSO Advantage – lower likelihood of benefiting from CTE by meeting future employers or earning licenses or certifications – is not observed to the same extent when the focus is solely on SkillsUSA members and CTSO non-members.

<sup>23</sup> For example, see <https://www.pewresearch.org/social-trends/2019/04/09/the-role-of-race-and-ethnicity-in-americans-personal-lives/>

<sup>24</sup> Due to small numbers of cases, however, Asian students are excluded from this portion of the analysis.

<sup>25</sup> Although some previous studies have looked at the impact of CTSOs on students of color, these have sometimes had to resort to aggregating students into a “non-white” category. (See Steven R. Aragon, Corinne Alfeld, and David M. Hansen (2013) “Benefits of Career and Technical Student Organizations’ on Female and Racial Minority Students’ Psychosocial and Achievement Outcomes,” *Career and Technical Education Research*, 38(2), DOI: 10.5328/cter38.2.105, pp. 105-124.) The analysis presented here suggests that students who would otherwise be designated “non-white” vary somewhat in the benefits they report from CTE, and that those differences can be different for males and females of the same racial ethnic group.

<sup>26</sup> See <https://www2.ed.gov/programs/titleiparta/index.html>

<sup>27</sup> SkillsUSA members are 6% of the student sample.

<sup>28</sup> Some studies have focused on the four explicit areas of growth CTSOs are charged with promoting as well as psychosocial (academic motivation, academic engagement, civic responsibility) and achievement outcomes (grades, career self-efficacy, college aspirations, and employability). (National Research Center for Career and Technical Education. [2007] “Looking inside the Black Box” and Steven R. Aragon, Corinne Alfeld, and David M. Hansen (2013) “Benefits of Career and Technical Student Organizations’ on Female and Racial Minority Students’ Psychosocial and Achievement Outcomes,” *Career and Technical Education Research*, 38(2), DOI: 10.5328/cter38.2.105, pp. 105-124 ) Still others look at CTSO activities’ value as a protective factor for students’ own mental health as they seek to nurture the mental health within the community ( Cindy Beck; Gustavo Loera; Jonathan Nakamoto; Jan Parsons (2022) A Qualitative Study: Examining Students’ Involvement in A Career and Technical Student Organization and Practicing and Promoting Mental Wellness *Journal of Research in Technical Careers* Vol. 6, No. 1 . Others draw on research from multiple sources highlighting academic, employability, and technical skills (ACTE, 2011. Expanding Career Development through Career and Technical Student Organizations).

<sup>29</sup> Some suggest that students who are willing to join a CTSO are simply different from others. We examined whether the differences we find might simply be due to self-selection by comparing the CTSO boost for those who were attracted to CTE by opportunities to engage in hands-on learning, interest in extracurricular activities, and GPA. After controlling for these, CTSO membership continued to be associated with a boost in achieving the CTE benefits that are the focus of this study. So while there may be some differences between students in CTE classes who join CTSOs and those who do not, CTSO membership is still associated with a boost in CTE outcomes.

<sup>30</sup> Although the seven general benefits tap distinct concepts related to the CTE experience, factor analysis shows they load on a single factor.

<sup>31</sup> Students who respond “No” or “Not Sure” are defined as not achieving the outcome/ not benefiting in this way.

<sup>32</sup> There is some degree of overlap across the groups since students could identify with up to four racial/ethnic groups.