Building Opportunity

The Case for Investing in and Improving Skilled Trades Education in America's High Schools



HARBOR FREIGHT
TOOLS FOR SCHOOLS



Let's Build on What We've Learned

At Harbor Freight Tools for Schools, everything we do to advance skilled trades education in America's public high schools rests on three beliefs:

1. **People who work with their hands are intelligent, creative, and deserving of our admiration and support;**
2. **Students learning the trades can build great careers, including pathways as leaders and entrepreneurs; and**
3. **Skilled tradespeople built and will build our country, serving essential and fulfilling roles in our communities.**

To do our work well, we knew we had to try to answer two big questions: **What does U.S. skilled trades education in high school look like right now? And what do we as a country think about it and want from it?**

In the year prior to the COVID-19 crisis, we commissioned two research studies to start to answer those questions with the hope of catalyzing productive conversations about the potential of high school skilled trades education to uplift students, families, communities, and our economy. These aims seem ever more poignant in the spring of 2020.

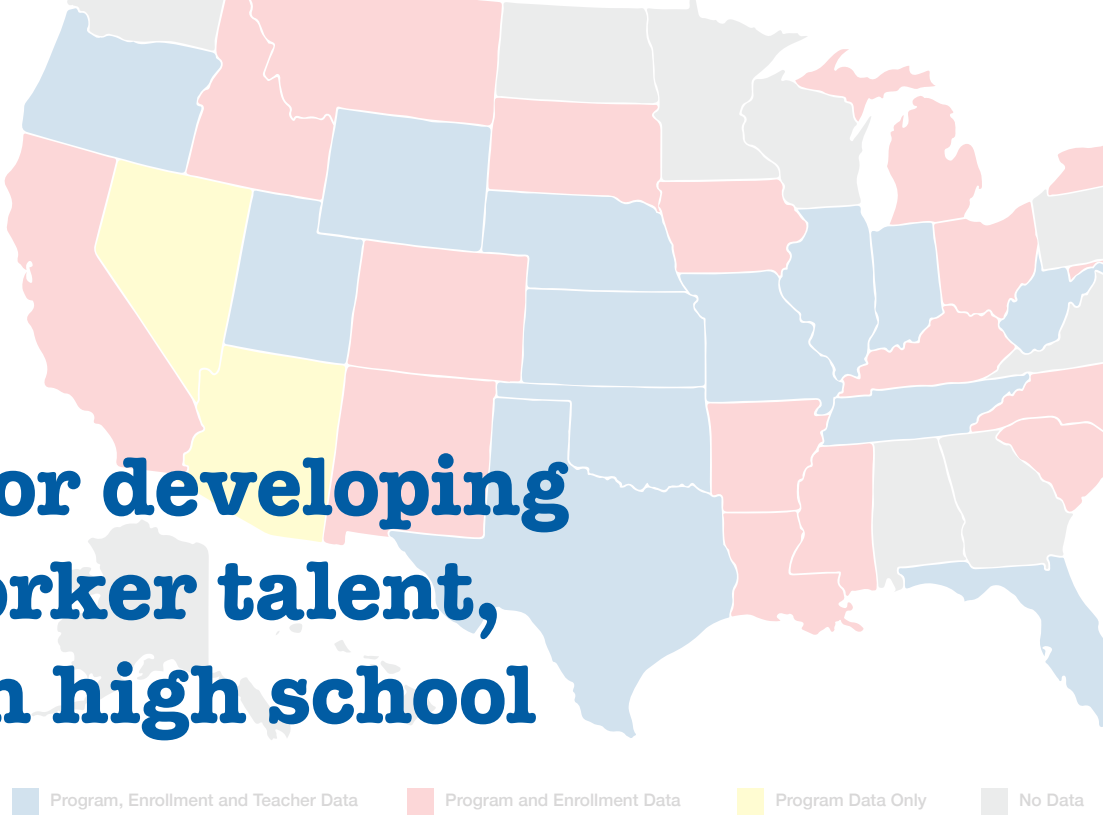
The first study, a landscape analysis conducted by the nonprofit Jobs for the Future (JFF), looked at who takes skilled trades courses and where; who teaches them; and how they connect, or don't, to economic and workforce needs. The second, a poll conducted by NORC at the University of Chicago, a nonpartisan research center, asked parents, voters, and students their thoughts about trades classes and careers.

As we prepared to bring the results to light, the COVID-19 virus spread around the world and our own country, shuttering schools and workplaces, upending our daily routines, and casting into sharp relief what it means to do an "essential" job. We are releasing these reports in highly uncertain times, fraught with challenge, which dramatically shift underlying assumptions about the future upon which the reports relied. But even as the economic and social costs are being felt and navigated, this moment offers the call for deeper appreciation for the skilled tradespeople who keep our homes, offices, public works systems, and, crucially, our hospitals running.

We bring an urgent and deeper sense of commitment to providing excellent skilled trades education to students in America's public high schools—so our communities have the benefit of their skills in the recovery and so students can have a head start on pathways to rewarding and, yes, essential careers. **Our biggest realization from these studies is the significant gap between the current version of high school skilled trades education and what Americans want and need.** This gap demands our attention, and our partnership with those of you who are reading. Indeed, we see this gap not as an insurmountable challenge but, rather, as a pressing opportunity.

Let's fix this — together.

Danny Corwin, Executive Director
Harbor Freight Tools for Schools | May 2020



The case for developing skilled worker talent, starting in high school

Together, the two research reports commissioned by Harbor Freight Tools for Schools are the **first comprehensive look at skilled trades education in American public high schools.** Despite a wealth of information on education and economics generally, we simply don't know enough about this critical piece of the nation's talent pipeline, as JFF discovered through the course of this study. The emerging picture, however, is that education systems are not yet meeting the needs of American students or of our country's economy and infrastructure. The NORC poll found a strong reaction to that misalignment: Students, parents, and voters want it fixed.

Thirty-seven states provided JFF with data about their skilled trades programs, students, and teachers—though only five states were able to provide all the data requested. State career and technical education leaders from all 50 states participated in interviews. From this "data desert with few oases," the report was able to capture key, baseline findings.

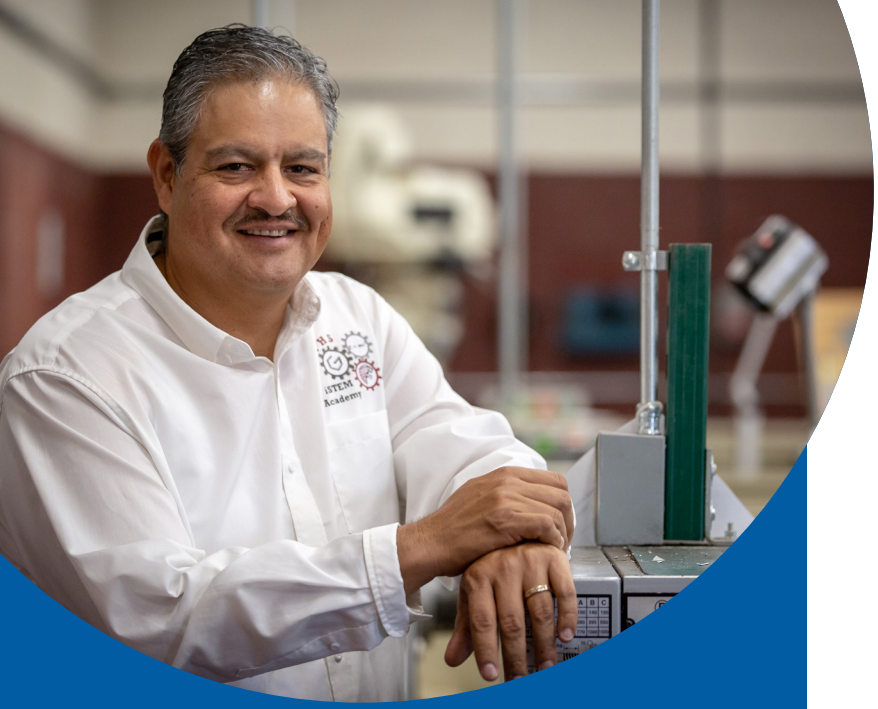
Thirty-two states reported a total of more than 870,000 students in trades education. This represents close to 8 percent of the high school population in those states, and more than 10 percent of the 8.3 million participants in CTE programs nationally. We estimate that at least 1 million students study the trades nationwide. A substantial portion of these students "concentrate," or take multiple, sequential courses, in a trade.

Nationwide, educators are trying to address labor market demands through the high school trades courses they offer, but the alignment does not extend to all subject areas. Among the 37 states that provided data, the most commonly offered courses are in construction and advanced manufacturing, which are also among the areas of highest demand nationally based on projected annual job openings as of 2018. Conversely, states are offering the fewest courses in plumbing, which is an area with even higher projected demand.

Across the country, there are far too few students enrolling in trades courses in high school, and often, those who do enroll are choosing fields that are less in demand.

In fact, **there is no skilled trades field where current enrollment in high school programs is projected to meet even half of employer demand over the next decade.** While a recession resulting from COVID-19 may reduce that demand in the near term, given these sizeable gaps, and the fact that much demand is driven by retirements, the need is still likely to outpace the availability of trades workers. This is further complicated by JFF's findings showing a looming trades teacher shortage, and cuts to education funding that typically result from an economic recession.

In recent years, states across the country have invested in the quality and availability of their K-12 and postsecondary career and technical education programs. States have made collective and innovative efforts to improve data collection and increase employer partnerships, dual enrollment, and teacher externship programs. Still, we lag behind where we should be.



Teacher Spotlight: Opening Doors of Opportunity

As a teacher, Cesar Gutierrez believes his role is to empower students, transform a community, and break the cycle of poverty.

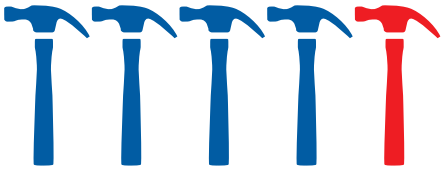
An educator since 2007, Gutierrez began teaching manufacturing at Tucson, Arizona's Desert View High School in 2012, where he helped create the iSTEM Academy. While iSTEM was a response to local employer concerns that prospective employees in the defense and aerospace industries were in short supply, Gutierrez had another mission as well: introduce students from historically underserved populations to the rigorous programs he knew would provide them with strong options after high school.

His first class had only 44 students, but today, the iSTEM Academy serves 300 students each year. Eighty percent of students are Latino, and 90% qualify for free or reduced-price lunch. Gutierrez's students can receive up to 25 college credits — nearly a full year of school — toward their associate degree in industrial technology, thanks to a partnership with Pima Community College. Gutierrez's students have a 100% graduation rate in a state where the average is below 80%. Eighty-two percent of his students graduate with postsecondary credit, and all have participated in work-based learning by the time they receive a diploma.

Cesar Gutierrez is a winner of the 2019 Harbor Freight Tools for Schools Prize for Teaching Excellence.

Skilled Trades in the United States

HIGH DEMAND



Over the past decade, jobs in carpentry, plumbing, electrical and advanced manufacturing have ranked among the **top five hardest to fill.**



50%
Are Mid-Career or Older

In 2018, half of skilled trades workers in the United States were 45 years and older, including almost a quarter over age 55.



Even during an economic downturn, retirements drive high demand for skilled tradespeople. For every new job created in the sector, there are 15 vacancies due to retirements and turnover.

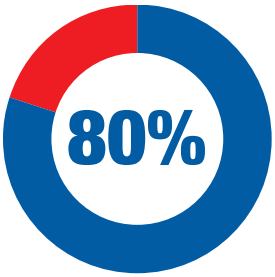
Pay That Rewards Skills



Construction workers earn an average of more than $49,000 annually, with some supervisors earning an average of $70,000, and higher-level managers earning more than $90,000.

Combating Negative Perceptions

When we compare the landscape analysis from JFF with the results of the poll by NORC, one paradoxical finding is that education leaders unanimously cite a stigma against trades education, but the opinion research strongly suggests there is far less stigma. To us, this suggests that Americans realize the trades are vital, and are interested in high school trades courses, but still don't understand the effectiveness of high school trades courses or the opportunities offered by trades careers as a path into fulfilling and essential work with family-supporting pay.



80% of voters across the political spectrum described the skilled trades as "important," and 83% say the government should provide more funding for skilled trades classes.

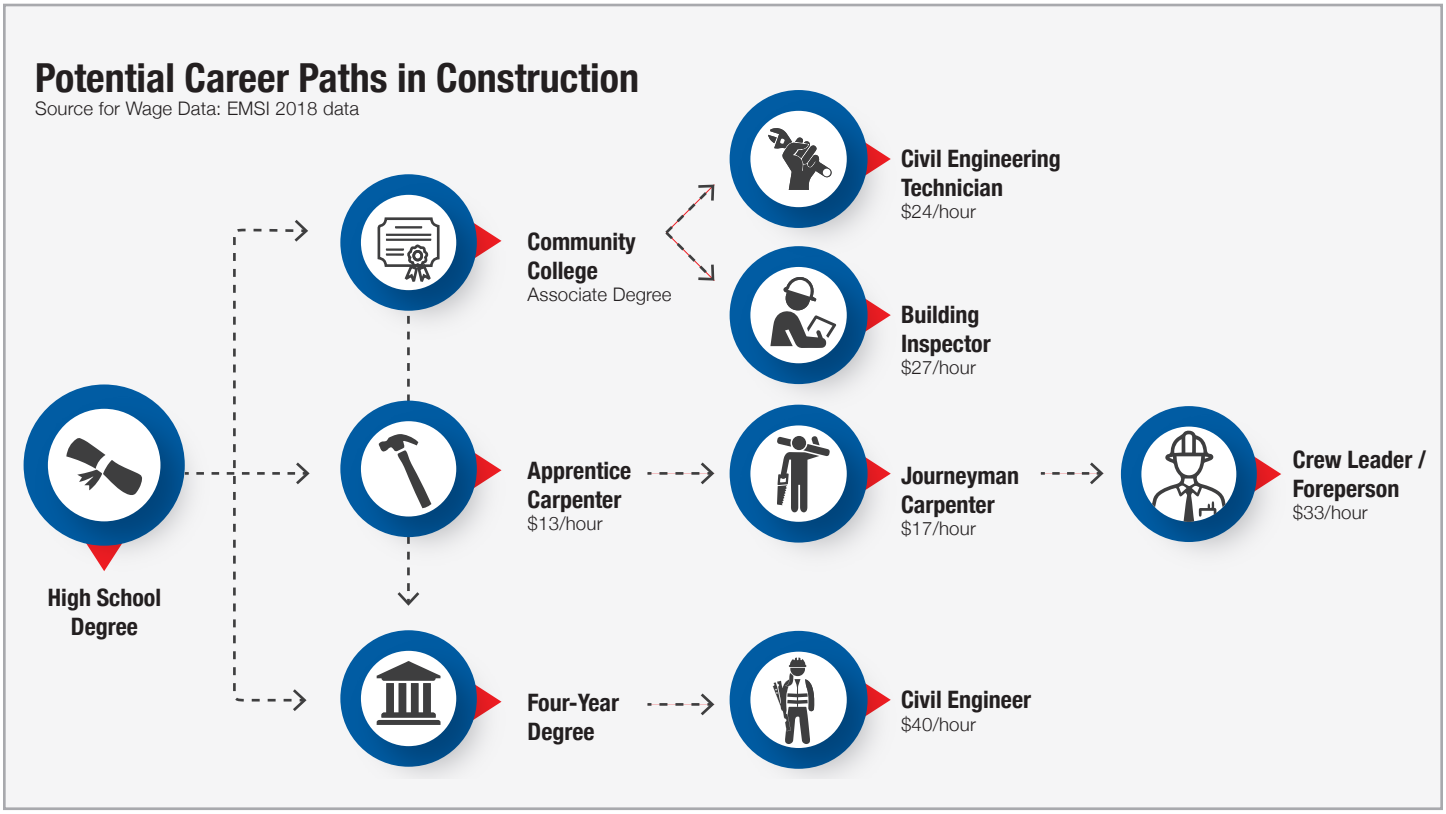
Meanwhile, education systems are hampered by the long history of "tracking," or separating students into college-preparation classes for some students and vocational ones for others. This system led to students of color and students from low-income backgrounds being deliberately placed into "shop classes" that weren't seen as paths to success after high school. Educators steeped in this history likely realize that institutional support, including funding, for high-quality, modern skilled trades courses lags well behind popular opinion.

Skills for College *and* Careers

The best trades programs incorporate project-based learning, hands-on problem solving, and teamwork, as well as real-world experiences, high-quality industry certifications, paid apprenticeships, and credits toward an associate degree. This training puts students on a faster path to a career with family-supporting wages—and it provides soft skills that transfer well to any path after high school. In fact, as JFF's data and other studies from the field demonstrate, when students take in-depth trades courses throughout high school they are more likely to graduate than their peers.

Apprenticeships are a bright spot in trades education, particularly when made accessible to high school students. These longstanding and well-regarded pathways into the trades often combine technical training and hands-on work experience with classroom instruction and the chance to earn college credit and degrees. Apprentices with the International Association of Heat and Frost Insulators and Allied Workers, for example, take classes in math, applied physics, mechanical drawing, and digital technology. The New York City Plumbers' Union apprenticeship programs leads participants to a full associate degree.

In addition to certifications, skills, and workplace experience, a trades education also gives students an opportunity to work their way through college with a job that pays well — eliminating the need to take on significant college debt.









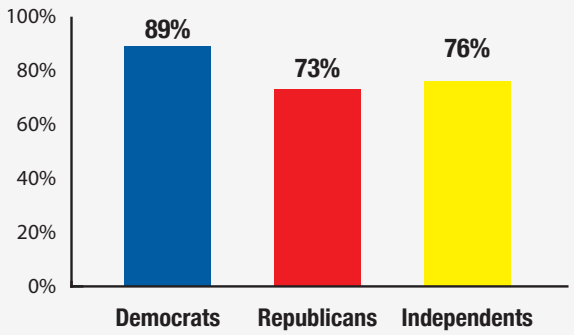


Something America Can Agree On

Students and their parents see the value of trades education, which also enjoys remarkably strong bipartisan support. In fact, the vast majority of parents — 89% — believe American students would be more prepared for success in a career if there were more opportunities to study the skilled trades. And more than 7 in 10 students (72%), parents (77%), and voters (89%) say high schools could do a better job preparing students for life after graduation by giving them more chances to learn real-world skills.

Republicans and Democrats find strong common ground here: a large majority in both parties support increased funding.

Favor Increased Federal Funding for Skilled Trades Education



Why are we not prioritizing skilled trades education? Employers report a critical shortage of qualified workers. Students want to learn these skills, and their parents support them doing so. Voters across the spectrum are willing to pay for an increased investment in trades education, and say they will support candidates who make it a priority. This is a rare moment of opportunity for alignment among educators, industry, policymakers, parents, and students to fulfill the promise that trades education offers.

Let's fix this — together.

A Checklist for Getting it Done



It is our hope that no matter where you sit, you feel inspired after reading this report to get involved and to share with us your thoughts on the work ahead. We invite you to connect with us online at HarborFreightToolsforSchools.org or by emailing research@hftforschools.org.

Below are steps we offer for three groups we believe can start to make meaningful change.

Governors and State and Local Education Leaders

- ☐ **Connect education and economics:** Understand and plan according to labor market needs, career opportunities, and high school course offerings.
- ☐ **Forge K-12/higher-ed partnerships:** Support connections between high school and higher education systems to develop pathways for students to advance their learning.
- ☐ **Set high standards:** Align state systems around clear standards for high-quality trades education, collecting and using data, and maximizing the impact of federal funding.
- ☐ **Exert leadership:** Communicate both the labor market need for trades workers and the importance of making skilled trades careers available to a broader segment of students.

State Labor and Workforce Development Leaders

- ☐ **Gather all the facts:** Work with relevant state agencies to gather and update data on employment and job openings, infrastructure needs, and necessary skills and credentials, and share the information widely.
- ☐ **Grow apprenticeships:** Support the development of new apprenticeships or expansion of existing ones that help grow the skilled workforce.
- ☐ **Use existing networks:** Convene groups that bring secondary and higher education, industry, labor, and workforce perspectives to the table.

Industry and Union Leaders

- ☐ **Go to the schools:** Help provide skilled trades education in high schools. Offer financial assistance, materials, mentoring, and curriculum advisement; and support the trades teaching workforce through externships and co-teaching.
- ☐ **Open your doors:** Offer work-based learning opportunities in and beyond high school, including expanding access to high-quality apprenticeships.
- ☐ **Get the word out:** Advocate for state and federal investments to support skilled trades education, and reach out to state and school district leaders to understand the challenges of providing high school trades education.

To learn more, visit https://harborfreighttoolsforschools.org/what-we-do/research/

About Us

Harbor Freight Tools for Schools is a program of The Smidt Foundation, established by Harbor Freight Tools founder Eric Smidt, to advance excellent skilled trades education in public high schools across America. We have a deep respect for the dignity of the skilled trades and for the intelligence and creativity of people who work with their hands. We believe that high-quality skilled trades education gives high school students a pathway to graduation, opportunity, and good jobs, and produces a workforce our country needs.

To learn more, visit
harborfreighttoolsforschools.org



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