

HARBOR FREIGHT

TOOLS FOR SCHOOLS

Skilled Trades in American High Schools: Teaching and Learning Now and for the Future

June 2017

About Harbor Freight Tools for Schools, LLC

Harbor Freight Tools for Schools supports the advancement of skilled trades education in America—born out of its founder’s deep respect for the dignity of these fields, and for the intelligence and creativity of people who work with their hands. This charitable initiative was created to foster and shine a light on excellence in the skilled trades pathways of Career & Technical Education (CTE) and it aims to stimulate greater understanding, support and investment by public entities and others. Top-notch skilled trades education in high school offers pathways to graduation, opportunity, and a workforce our country needs. Harbor Freight Tools for Schools was founded by Eric Smidt (the founder, owner, and CEO of Harbor Freight Tools, a national tool retailer) and is now one of the philanthropic programs of The Smidt Foundation.

This survey research project was conducted by Harbor Freight Tools for Schools, LLC.

The survey was conducted between June-September 2016.

Questions? Ideas?
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INNOVATIVE
STRATEGIES

Why this research

Like Eric, the Harbor Freight Tools for Schools team is entrepreneurial, committed to community building and the belief that public education can change lives. Our approach is grounded in data, experience, intuition and humility, and we value frugality, fine execution of strategy and accountability. Through initial research, many conversations with teachers, administrators, students, associations, business and labor leaders and policy makers, and through initial grant-making over the last few years, we have sought to understand the landscape of skilled trades teaching and learning in American high schools.

On the direct-is-best strategy (rather than we-know-best), in order to provide meaningful support to foster and illuminate excellence in this sector ahead, we have aimed to draw upon these CTE educators' perspectives, articulated needs, recommendations and hopes.

We've learned there is scant current research regarding vocational education that disaggregates data related to skilled trades educators alone. And so, Eric recommended outreach to a small sample of Harbor Freight Tools' massive digital customer database as a field test for an opt-in survey from skilled trades educators. A focus group of skilled trades high school teachers in Denver held in late spring informed the creation of the survey instrument, as did broader studies conducted by the Association for Career and Technical Education in partnership with the National Research Center for College and University Admissions; the American Federation of Teachers, various state studies by contractors' associations, etc.

We developed and administered the query in June and September 2016. It included 27 questions.

This study is not based on a scientifically drawn random sample over many years, with the clarity and precision such studies often offer. However, we believe the findings poignantly illuminate both needs and opportunities in an education sector vital to our country's future, and where labor shortages already loom. Responses to this survey make a compelling case for investing in skilled trades education – expanding access, boosting quality, and heralding its positive impact on students' lives and the larger national economy.

Survey Methodology and Responses

Between June and September, 2016, a targeted national request was distributed digitally to educators drawn from a small cohort of Harbor Freight's customer database. Survey distribution was first targeted at likely CTE teachers based on email address and location data. An invitation to participate in the survey was included in a direct letter from Harbor Freight Tools CEO Eric Smidt, citing the importance of hearing directly from CTE teachers in the skilled trades in American high schools to help build Harbor Freight Tools for Schools.

From 40,000 email inquiries, 520 completed surveys were received from educators in 50 states who said they taught a total of 57,000 students last academic year in a wide range of skilled trades vocational education classes. Among them were construction/architecture, carpentry, electrical, welding, plumbing, auto mechanics, green construction, heating/AC, and in specialties ranging from motorcycle maintenance and guitar-making to small engine repair, masonry and solar. Close to 69% of respondents said they had been teaching for ten years or more; a strong majority of respondents (60.6%) were teachers in skilled trades classrooms in American high schools. The other 40% teach in middle schools, regional occupational centers, community college, or universities. 93% reported teaching experience at the high school level. 15% had served in the military, a percentage double that of the US adult population as a whole. In addition to their teaching credentials, over 84% said they had significant trade or industry experience.

Survey Respondents

On the whole, the teachers are:

- **Connected** (68% belong to CTE professional associations and organizations)
- **Confident** (90% felt their students were prepared to continue CTE coursework beyond high school)
- **Committed** (76% have other school roles beyond teaching, such as serving as principal, wrestling coach or advising the chemistry club. 92% said they would be willing to continue participating as Harbor Freight Tools for Schools is further developed and to delve into greater depth around these topics.)

Top Line Findings

The state of American skilled trades classrooms and schools vary widely.

The findings illuminate wide variation in skilled trades classrooms, course availability and student participation. As described by respondents, just over a quarter of their skilled trades classes are undersubscribed while a third are crowded, and close to 9% are overcrowded. Interestingly, over 39% reported funding cuts over the last few years, with some CTE skilled trades classes eliminated, while close to 29% reported that skilled trades classes had been added. Close to one third reported difficulty in recruiting talented CTE teachers for the skilled trades, while 46% said their CTE faculty was stable.

Local employment needs are taken into consideration when selecting and designing CTE courses. Individual businesses are seen by far as most effective community partners; their engagement is valued as advisors.

75% said that local employment needs are indeed considered in coursework offerings and design. 84% of respondents said employers are involved in their academic programs, and that individual businesses were by far (77%) their most effective community partners, far outstripping entities such as community colleges (35%), industry organizations (32%), chambers of commerce-like organizations (27%), district CTE staff (21%), workforce

investment boards (10%) or labor organizations or locals (11%). Employer involvement is largely as advisors to programs (56%), or advisors to teachers (15%). Less than 7% each are mentors to students, offer internships, offer a direct path to a job or donate tools and equipment. Only 4% donate funds to support programs or scholarships and just over 1% donate work space, meeting space or land.

Internship hopes and realities differ widely; seen as important by 57% and a central practice by 27%, with 29% wanting more internships for their students.

There were a wide range of practices reported related to internship offerings:

27% said internships were central to coursework. Of these, just over half offered paid internships and 46% were unpaid.

15% said internships were important but lack time or resources to find them or have good supervision.

15% said internships were important but their region had few placement opportunities.

Close to a third do not offer internships.

Disconnect, maybe

Nationwide research shows that American high school students with significant CTE coursework background graduate from high school at rates

higher than the national average, and these students are almost as likely to pursue postsecondary education at community colleges and universities as their

peers. However, there is uncertainty as to whether respondents were aware of these trends, or whether they apply in every region. When asked about their own experience regarding these two trends, between 48 and 56% agreed; about a third said they did not know, and between 13 and 17% said “no”.

“What are the greatest challenges to overcome in the next few years for skilled trades teaching and learning to be most successful and effective?”

“In addition to increased funding, what two things would most significantly help deepen the quality and depth of these programs over the next few years?”

Respect, funding, raising the quality and support for skilled trades teaching and learning, and a connection to employers are critical needs.

Threaded through responses to these two open-ended questions that concluded the survey was a passionate call for greater acceptance of and respect for the skilled trades as vital for students and communities, offering meaningful career choices and good jobs. While more funding was by far the top challenge named in response to the first question, responses to the second question helped clarify how additional resources could be allocated.

“I believe that the biggest obstacle is the perception by school leaders that all students need to go to a four-year college to be successful. CTE teachers know that this isn’t always the case.”-Automotive Teacher, OR

Recommendations fell into three broad categories:

Raise the quality of CTE skilled trades teaching and learning.

- ▶ Build a strong pipeline for skilled teacher recruitment, and support with useful professional development and around strong curriculum and pedagogy
- ▶ Have access to safe and modern equipment, tools, technology, and facilities

Systematically integrate real world experience and deepen employer connection.

- ▶ Grow the number of companies and mentors as partners for teachers and students, with internships and apprenticeships

Change the broad cultural perception that the skilled trades are “less than” and that “college is for all.”

- ▶ Remove the stigma (this word often cited) associated with work in the skilled trades, elevate, and celebrate its strengths
- ▶ Have meaningful support from administrators and counselors
- ▶ Educate CTE teachers, other educators, parents, students, and communities of the value of CTE skilled trades and work to change the widely held belief that college is for all

Greatest Challenges

The most often cited responses were in order of intensity:

Greatest Obstacles?	Most Helpful Changes?
Funding	Changes in Curriculum, Pedagogy, Course Placement, Class Size, Teacher-Student Ratios
Lack of knowledge about CTE and its benefits	Meaningful Employer Engagement
Student Attitude and Aptitude	Community Involvement
Availability of Modern Equipment, Tools, Technology, and Facilities	Apprenticeships and Job Placement
Changes in Curriculum, Pedagogy, Course Placement, Class Size, Teacher-Student Ratios	General Knowledge about CTE and its benefits/Increase in number of qualified teachers (tie)
Broad Cultural View that College is for All	Teacher Professional Development
Number of Qualified Teachers/Other (tie)	Student Attitude and Aptitude
Need for Support from Administrators and Counselors/Meaningful Employer Engagement (tie)	Other
	Support from Administrators/Counselors
	Broad Cultural View that College is for All

“Real World Experiences, field trips to production facilities and job sites where construction is taking place. Opportunities for students to work in the industry and find out if construction is really what they want to pursue as a career.”-Construction/HVAC/Electrical/Plumbing Teacher, VA

“Removing the stigma of trades being a ‘low status’ careers, in spite of the potential financial and upward mobility.”-Automotive Teacher, FL

Observations and next steps for Harbor Freight Tools for Schools

Based in part upon the feedback received from teachers in this survey, Harbor Freight Tools for Schools will begin to pursue the following strategies to support the deepening and expansion of excellent skilled trades education in American high schools:

Stay focused on high schools

We will continue to focus its efforts on skilled trades teaching and learning for high school aged students, and support a peer network of educator as advisors.

Share our findings; keep learning

We will first share survey results and next steps with survey participants and learn from them as well as surface questions for further study.

We will share these results more broadly with leading educators and policy-makers, as well as with leaders in other critical sectors of this world: employers and associations, apprenticeship providers, interested unions, economic and workforce development agencies, other nonprofit organizations, and other existing and potential partners and funders.

“Staying relevant and keeping up with changes in the industry. Since teaching is most of our primary jobs, we are not getting the training that employers would be providing as technology changes.”-Agriculture Teacher, VA

Focus on strategies targeting areas of greatest need and opportunity:

- ▶ Harbor Freight Tools for Schools will pressure test and experiment with support strategies that target the most significant obstacles identified in the survey such as:
 - ▶ Building from a few classrooms/schools over several years, often focused on professional development, classroom upgrades, mentor relationships, and paid internships. Grow based on lessons learned, and guided by partner wisdom of the nonprofit, Exploring the Arts, which has provided exceptional, grounded, hands-on support to classrooms similarly—in the field of arts education.
 - ▶ Experiment over several years with holistic support (as that note above) with skilled trades coursework in different kinds of high schools and adjacent nonprofits that also result in industry-recognized credentials.
 - ▶ Identify exceptional skilled trades high school teachers, supporting them, their students, and community-serving projects they create as exemplars
 - ▶ Explore CTE leadership recruitment, development, and support pipelines.

- ▶ Experiment with and learn from the experience of principals, teachers, and students via a small grants program offering in-kind tools donations to skilled trades classroom in high needs schools in America
- ▶ Support novel, modern, effective communications strategies to illuminate and promote understanding of and respect for the vitality of the field and the skilled teachers and tradespeople in our country who build, repair, and create