

Reintroduction of Skilled Trade Programs for High School Students

Cristian Ayala-Quirino

California Polytechnic State University
San Luis Obispo, CA

The curriculum that incorporated skilled trades has vanished from many high schools, and more students are encouraged to attend college instead of pursuing trades. People view construction labor positions as jobs instead of careers. The construction industry is facing a substantial labor shortage amongst skilled laborers throughout the whole industry. Not enough people know how beneficial a career in the construction labor force can be. If more people knew about these career opportunities, they might have a greater interest in pursuing a career as a skilled tradesperson. To comprehend students' understanding of the construction industry and examine where we can expose students to construction opportunities, a survey was conducted amongst high school students. The survey approach gauged the student's basic knowledge of the industry. It helped specify areas where institutions can better support their students to provide them with career opportunities within marginalized communities and first-generation students not pursuing higher education. This research allowed for a collective understanding of students' basic knowledge and presented potential approaches or programs to reintroduced into curriculums. This paper presents data analysis and suggests how the information gathered could create solutions/programs to ameliorate the workforce shortage to combat the industry's future demand.

Key Words: Skilled Trade, Central Coast, Education, Labor Shortage, Career Paths

Introduction

In today's society attending a university/college is heavily stressed upon to "make it out," but what some do not understand or thereafter not grasping is the basic knowledge that entering a skilled trade can be a career path, not just a job, presenting its own benefits and opportunities. Additionally, while attending a university is a prestigious opportunity, not all students bear the privilege to attend due to citizenship status, economic, social, or political factors. In a survey by "Associated General Contractors of America, some 70 percent of the U.S. construction firms report difficulty finding qualified workers" (Costanzo, 2018). Lack of skilled tradespeople is making the construction industry face many issues. There is no surprise that multiply disparities are happening in one of our major economic sectors, the construction industry "that spends upward of \$1 trillion on construction each year" (LePatner, 2008) that we cannot overlook anymore because this industry affects our country's overall economic balance. Is this a surprise... no, we have known that the construction sector would/is losing skilled laborers. One of the major factors is since many skilled tradespeople entering retirement are from the generation of baby boomers, where there are now more vacancies of jobs than people being able to fill them across the board. The shortage of these trades will affect us by "inflating our schedules, costs, quality and limit deliverables and overall growth" (Sedam, 2016).

The question that we are currently asking ourselves right now is where we can find these skilled laborers. However, what we should do as an industry is reevaluate how we see this issue and how we can be part of the solution; the question now is how can we provide resources or support to these

students that might not understand or know about career paths in the skilled trades to get them interested in construction. To even start any programming or recourses for students, we must understand the barrier preventing students from gaining this knowledge and examining how we can incorporate these programs with the current system and change the lens that attending college is the only way to become successful and have a prestigious career. As Tara Brown writes, “shop classes are being eliminated from California schools due to the University of California/California state ‘a-g’ subject requirements” (Brown, 2012). These ‘a-g’ requirements are something that California and the whole American educational system have incorporated into their educational curriculums that have undervalued skilled trades and ultimately systemically eliminated shop classes. Students now have less of an opportunity to explore their options and discover career opportunities within the trades. Another daunting fact is that “high school administrators are graded on their effectiveness to administer those classes through Western Association of Schools and Colleges accreditation” (Brown, 2016). The UC/CA State School systems specifically focus on theory and not applied skills. This causes high schools to follow these rigid requirements to ensure they get their students into these institutions rather than budgeting or exploring other elective courses like shop classes.

In an article from Public School Review, Chen reflects on this statement, “School funding comes from a variety of federal, state, and city money pots. About 46 percent of public spending on elementary and secondary schools is derived from local government budgets. The size of the local tax base is one reason for the large disparity in spending.” (Chen, 2018) This brings on another layer of how students’ opportunities are being limited; this problem goes back to redlining and racial achievement gaps. “Redlining is a practice where banks in the United States would deny mortgages to people to prevent them from buying a home in certain neighborhoods, based mainly off their race, even if they had the right credit score to make them eligible for a loan” (Kelly, 2020). Many redlined neighborhoods from the twentieth century still reflect how cities look today; these areas have a higher concentration of minority residents and lower average housed incomes. Many students in these areas would be considered first-generation students. With that being said, how can we promote higher education to students when research and data have shown how racially and socioeconomically factors like housing policies cause inequitable education outcomes. While in contrast, students in wealthier neighborhoods qualify for better job opportunities and greater personal economic growth because of the recourses and support they get from their communities. If there was/is an interest in joining the construction skilled trades students that are in these communities which make a majority of the skilled labor force in construction are not being provided the resources need and are being taught a curriculum that will not benefit them if they are not interested in pursuing higher education. Potential solutions to this issue that the construction industry is facing is for the school’s system to engage their students to see their general interest in implementing electives regarding any trades and cultivating partnerships with local construction firms/trades. These partnerships could potentially provide resources and support for students interested in the trades.

Pioneer Valley High School in Santa Maria, CA

Santa Maria is on the Central Coast of California and is traditionally agriculture dominated. Through their General Plan Update 2040, Santa Maria “will need to meet a wide range of state statutory requirements, including, but not limited to, land use, the environment, and housing” (General Plan Update 2040, 2020). This update has a survey that pertains to its priorities and new visions; while analyzing this document, it shows that preserving agricultural resources is at the highest of importance for their new vision as Santa Maria is part of the greater central coast, which stands as a major provider of agricultural products in all the states. But one of their major goals is to attract industry and commerce to expand their city's future growth and increase the city's economic potential. We can only

predict that the need for skilled trades will only increase in this area and be more crucial in the coming years to achieve these goals.

With a population of 105,483 as of 2018, 75.5% of the population identify as Hispanic or Latino (Santa Maria California Education data, n.d.) Santa Maria is one of the major cities on the Central Coast. If we dive into Santa Maria's educational attainment breakdown, we see that only 13.4% of its residents pursue higher education. In contrast, 86.6% only achieve a high school/GED certification or below, in the estimated count of 30,730 students enrolled in SM schools (Santa Maria California Education data, n.d.). With these kinds of statistics, we can see there is a big pool of potential workers, but they aren't they entering the workforce for some reason. According to Brown, in *Death of Shop Class and America's Skilled Workforce*, she writes, "75% of students in California are not going to attend university yet they are taking classes that will help them get into UC and CA State schools" (Brown 2012). Considering that most of these students in Santa Maria come from a marginalized community/backgrounds, the most common work that some of these recent graduates enter is agricultural labor or retail, which are both humble works. However, it is something that they have known all their lives, which can become a generational cycle if they are not presented with resources or support in other fields if attending a university is not an option. With little being done to promote the construction industry, we must take a diligent approach and see where we can directly affect this issue. As we see, we are missing out on attracting a portion of this 75% of high school graduates which could be interested in construction trades. In the survey that will be presented, we will be focusing on the city of Santa Maria, CA, with a general population sample of students from Pioneer Valley High School, the largest public high school in the area. This study will analyze the interest in skilled trades and general knowledge among these students.

Methodology

The objectives of this research are:

- Understand if students have a general interest in construction.
- Consider what trades the majority of students are interested in.
- Give suggestions to high schools/local construction firms to help expose students to the industry.

Most of the data collected for this survey is quantitative and serves to understand better whether exposing students to the construction industry through elective courses/extracurricular programs would increase their likelihood of joining a skilled trade. A qualitative question was incorporated at the end of the survey, which asks about getting hands-on experience in the construction industry and how they would like it implemented. The survey was virtually given through a Microsoft Form to due to circumstances of COVID-19 to students at Pioneer Valley High School. The survey asked for general information on the student, including gender, grade level, understanding of the construction industry, and whether they were interest in pursuing a career path in the construction. The survey also asked more detailed information on what career path each was thinking of pursuing, giving students options such as Working After Graduation, Attending Junior College, Attending Four-Year University, Military, Other. The purpose of the Appendix was to see if there was any interest in the construction industry and see whether exposing students to the benefits of construction affected their choice in pursuing a career path in this industry.

Results

The data collected was a collection of responses from students attending Pioneer Valley High School in Santa Maria, California. Keeping surveys anonymous, the survey gathered a total of 55 respondents.

Survey Results

The data from Pioneer Valley High School students helped illustrate the interest of skilled trades as future career paths and their basic exposure/understanding of the construction industry. With the survey it was able to show that about half of the respondents were Seniors 26 of 55, approximately 47.3%. Of the 55 respondents, there were 34 females (61.8%), 19 males (34.6%), and 2 answers which one was nulled for improper identification of gender/blanks submission (3.6%).

Figure 1, pictured below, illustrates the percentages of each career path based on the survey results. The majority 38.18% of students are looking to enroll a Junior College, whereas 10.91% of students are looking to work full time upon graduation.

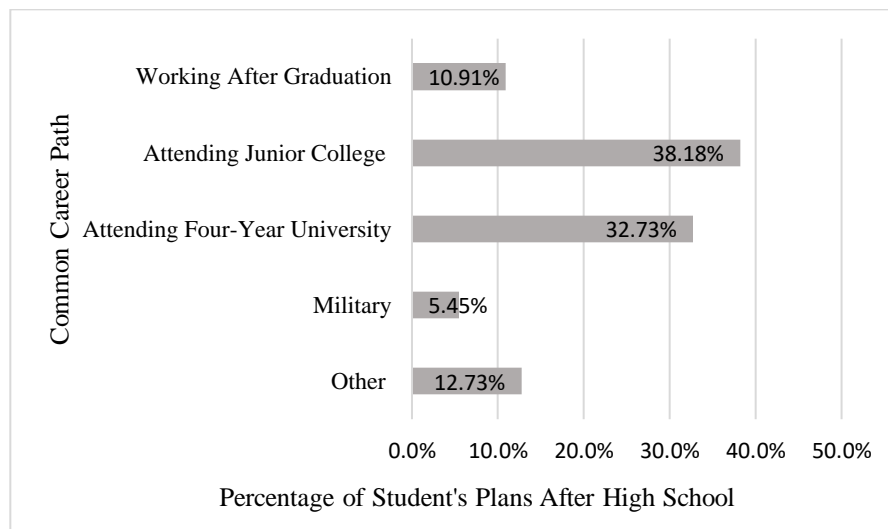


Figure 1: Student's Plan Upon Graduation

Figure 2 illustrates the number of first-generation students in this sample; out of the 54 respondents, 24 were identified as first-generation (44.44%). 19 of the 54 answered with N/a classifying themselves on a path not pursuing higher education at 35.19%.

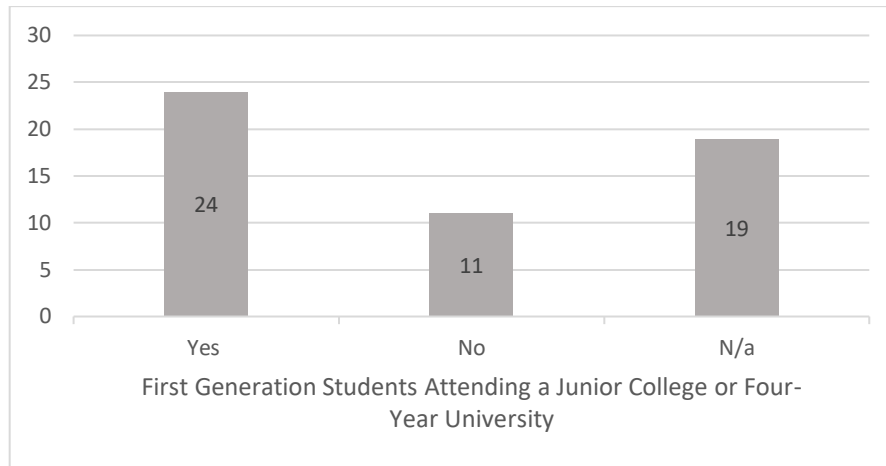


Figure 2: First-Generation Status

The survey also asked for the student’s understanding about the trades in construction, 8 of the 55 (14.55%), respondents answered with fair, 7 of 55 (12.73%) answered with moderate, and 1 of the 55 (1.82%) responded with good and 39 of the 55 (70.91%) responding with poor understanding about the trades in construction. The survey also found that only 13 of 55 students (23.64%) knew someone who is in a trade’s profession. Only 3 of the 55 students (5.46%) planned to pursue a career in the construction industry, leaving 40 of the 55 (72.27%) of respondents answering no and 12 of the 55 (21.82%) as a maybe.

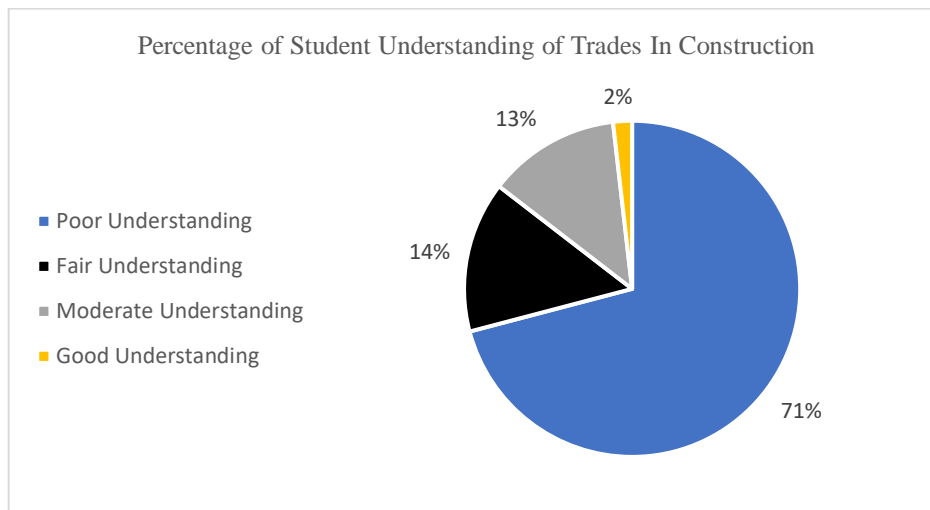


Figure 3: Students Understanding of the Construction Industry

Students then were asked what trades were of interest and to check all that applied. Carpenters were the greatest of interest at 16.92% and Electricians following 15.38% of the known written trades. The “Other” option, which was actually the biggest calculation, it showed 33 of the 65 (50.77%) as shown in Figure 4, pictured below.

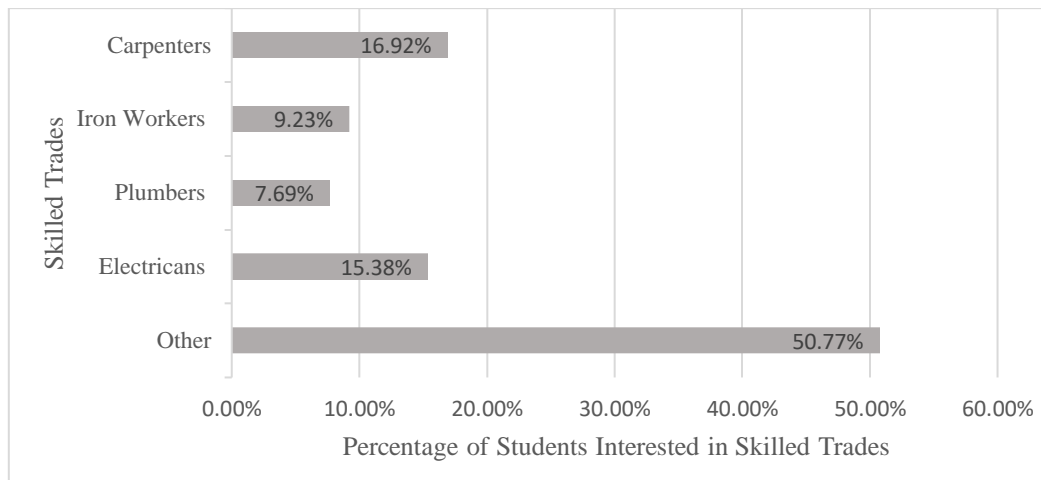


Figure 4: Student' Interest in Skilled Trades

The survey's following question compiled interest attainment in the construction industry if more industry members/local trades would get involved with high schools, with 42 out of 54 respondents (77.78%) answered yes. The last question asked for a short response they question posed if students were interested in getting hands-on experience in construction if so, how would they like to see it implemented in their school or community? While only 29 students responded, 19 of the 29 responded with a statement of affirmation. Some suggestions included:

- More classes or clubs for the different types of construction
- Maybe have a club or class that teaches hands-on learning to kids/students.
- I would want these trades to come to the schools on career fairs and other stuff like that.
- Preferably make a class of it, if not then make a school club and an area to do their thing.
- More people from construction companies should come to schools and telling us all about it and other information.

Survey Analysis

With this survey conducted, some theories stated in the introduction were able to be classified statistically. Some interlocking factors and areas of focus were confirmed where industry/education systems could set their efforts to promote skilled trades.

Going through the data, some questions were purposely composed to see if there were any correlation; one of the primary correlations that the survey confirmed that gender identity did not play a factor in basic knowledge of the construction industry, with 39 of 55 respondents answering poor understanding, 20 of which were seniors (12 Females, 8 Males) to the overall proportion of 61.82% Female to 34.55% Male. This shows that students are not being exposed to basic knowledge of the construction industry in school curriculum, as we see 20 of the 39 students answered with poor understanding and stood at a senior standing.

The second clarification that was stated through this survey was that most students will attend a junior college or four-year university, approximately 70.91%. 100% of students that identify as first-generation are planning to attend a junior or four-year university. However, 79.27% thought that if

industry members/local trades got involved with high schools, students would have a greater interest in the construction industry. This goes to show a general push to obtain a degree rather than pursuing any other career path. This data shows that there is a general interest in the construction industry while 70.91% of students are planning to attend a form of higher education. 79.27% of those same students agree that involvement by industry members would increase students' interest in the construction industry.

Interestingly, the survey surfaced that all the students who said "no" to industry members/local trades' involvement to peak students' interest in construction also all had a "poor understanding" of trades in construction. This led to some reflection for future research if lack of knowledge might play a factor in discouraging students from learning more about this topic and exploring their option or if there is just a general bias toward the construction industry and skilled trades. In contrast, when students knew of someone in a trade, 12 of the 13 believe that these partnerships would gain students' interest in the construction industry.

When analyzing where students' interest was in relation to skilled trades, we saw that 29 of the 55 did not participate for whatever reason, but of remaining 26 (47.28%) there was a general interest in of the trades presented. The survey did show an interesting discovery because the "Other" option had a significant deviation where the specified trades all fell under 20% but the "Other" option stood alone with 50.77% of the total. To be clear this question did have the option to select multiple answers but still this refines the idea that students aren't exposed enough to skilled trades.

25.46% of students answered 'yes' or 'maybe' when asked if they were planning to pursue a career or interested in the construction industry, all of which also agreed with statement of more industry involvement. Overall, to reiterate major statistical finding, 42 of the 55 (76.36%) agreed with more involvement of industry members/local trades at a high school level to raise interest in the construction industry.

The 3 people who answered with a definite 'Yes' for the question asking if they are planning to pursue a career or interested in the construction industry, the majority answered "No" for Question 6, which asked if they knew someone in the trades. These same respondents also answered 'no' in attending a junior college/four-year university. In addition, they also stated to have a poor understanding of the construction trades. This data is significant while small because these students from this sample who have no prior knowledge or interaction with the industry are willing to learn more about the skilled trades and are seeking resources to obtain this knowledge.

Conclusion

This study aimed to find out if high school students were interested in the construction industry. According to the data collected through the surveys, approximately 25.46% of respondents were willing to pursue a career in the construction industry, and 79.27% of students interested in industry members/local trade involvement with their school to gain more knowledge of the construction industry. To resolve the shortage of skilled tradespeople, the industry should target students at a younger age and implement construction programs/electives in schools. This will allow the students to become more knowledgeable of the construction industry and its benefits since they are not informed about these career opportunities.

Future Research

With the data presented through this survey, the common conclusion is that there is little to no exposure of the construction industry in this high school, thus lessening students' opportunities to enter skilled trades. The first thing we should do is deconstruct the fact that today's students are given this idea of obtaining a four-year college degree is the only path to success, because there are many great job openings that do not require a degree. We have to change how the educational system portrays skilled trades and have an institutional change to bring back more elective courses on trades into the curriculum. Initial steps can include reintroducing training programs or extracurricular opportunities where students can get this knowledge. Providing scholarships to students pursuing a career in the skilled trades, as an initiative. Also, as stated in the survey, it shows students are interested in construction industry involvement; bringing the primary sources of knowledge is massively beneficial in creating spaces for students to connect to the skilled trades. This survey illustrated common correlations and general assumptions of general construction knowledge taken by the sample size of high school students attending Pioneer Valley High School in Santa Maria, CA. Although this survey could not specifically give a strategic plan to start a Skilled Trade Program, we can now understand some factors that persist in the shortage of skilled tradespeople, including retirements, economic pressures, high school curriculums, and overall lack of exposure by the construction industry.

Appendix A

General Construction Knowledge Survey

Check each statement that best fits, this is a general survey to gain perspective on high school students understanding of the construction industry and interests.

1. What grade are you in?

- Freshman • Sophomore • Junior • Senior

2. To which gender identity do you most identify?

- Female • Male • Prefer not to say • Other:

3. What are you planning to do after high school?

- Working after graduation • Attending junior college
- Attending four-year university • Military
- Other:

4. If you checked “Attending junior college” or “Attending four-year university” will you be considered a first-generation student? If this does not apply check N/a.

- Yes
- No
- N/a

5. How much do you know about the trades in construction?

- Poor Understanding
- Fair Understanding
- Moderate Understanding
- Good Understanding

6. Do you know of someone who has a profession in the trades?

- Yes
- No

7. Are you planning to pursue a career or interested in the construction industry?

- Yes
- No
- Maybe

8. What trades are you interested in? Please check all that apply.

- Carpenters
- Iron Workers
- Plumbers
- Electricians
- Other:

9. Do you think if more industry members/ local trades got involved with high schools, students would have a greater interest in the construction industry?

- Yes
- No

10. Do you have an interest of getting hands on experience in the construction industry if so, how would you like to see this implemented in your school or community?

- Enter your answer

Online Link:

<https://forms.office.com/Pages/ResponsePage.aspx?id=2wING578IUSVNx03nMoq57Bv9vLFLh1AtHrv9TYXChVUQUdHTjE2T0JQOE5FUlhaSIZIRDdFQVZYUy4u>

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