

Ranking and Analyzing Soft Skills of Cal Poly CM Students During Their Internships and Importance of Possessing Them in the CM Industry

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Possession of a strong set of soft skills is essential to leading a successful career in the construction industry. Soft skills allow one to become an indispensable, well-respected, and effective member of one's team. Should one need to facilitate processes, solve problems, positively influence others and even just complete day to day tasks, a well-versed construction industry professional can rely on soft skills to manage any situations that cross their path. This study determines the perception and value of certain soft skills of student interns along with construction industry professionals alike. Along the dimensions of the study, the soft skills of main focus include communication, problem-solving, time management, leadership, and interpersonal/ social skills. A survey was administered to Cal Poly CM students using a mixed method research approach of questions to investigate and compare soft skills that CM student interns currently possess and soft skills the industry professionals require and need to strengthen. The soft skills currently possessed, and the soft skills desired as professionals were analyzed and compared using descriptive statistics which allowed for significant findings and patterns. The study concludes that certain soft skills carry much more value and are far more desirable than others as interns and professionals in the construction industry.

Key Words: Soft Skills, Interns, Internships, CM Industry, CM Students

Introduction

Professional success in the construction industry demands possessing both technical skills and soft skills. Groups of young promising professionals like student interns should welcome the development of such skills in order to be effective in their future careers. Students put in countless hours developing their hard/ technical skills while the same cannot be said about soft skills unfortunately as although technical skills and soft skills are equally important, students as interns are expected to acquire and develop their soft skills on their own essentially. On top of this, the interns are expected to develop these soft skills to a level necessary to address the demand of the employers. As future construction managers, these interns will need to be able to forecast, plan and control entire projects,

as well as indicate how these processes should be carried out. Apart from the technical aspects of their work, construction managers need to lead and motivate their teams, communicate across all levels of stakeholders, demonstrate resilience, and have a strong character.

The aim of this research study is to highlight and establish what are some of the core essential soft skills CM (construction management) student interns possess and which are most important prospective construction managers will need to master to be able to manage future construction projects. These core essential soft skills that make up the basis for this study are imperative for construction professionals to have longevity and successfully thrive in their future construction projects. For interns and professionals alike, gauging and understanding the desired soft skills required for construction industry professionals are indispensable.

Literature Review

The construction industry doesn't give enough credit to the importance and usage of soft skills so one might ask, "What exactly are soft skills?" Soft skills can be difficult to define and often need to be contextualized, as, in some industries apart from the construction industry, a soft skill might be viewed as a hard or technical skill. Although prominence of soft skills on and off the jobsite for all levels of construction may go unnoticed, they silently allow for all processes to run smoothly and ultimately, success of any and all projects. "One study found that only 25% of long-term job success depends on technical skills. Another study indicated that 85% of long-term job success is because of soft skills." (Zuo 2016) This all makes sense because construction professionals/ managers combine and utilize various unique and specific soft skills to perform everyday tasks. More notably, soft skills are essential to enhance hard skills.

Just like hard/ technical skills, there are dozens and dozens of soft skills that one can subjectively possess. Soft skills in the construction industry are vital in many aspects, but for the individual, it is evident that with a strong set of soft skills, you become an important member for your team, you gain sustainable employability, and many have said you become a strong contender to become successful in everyday life. In this study there is a focus on 5 core soft skills: communication, problem solving, time management, leadership, and interpersonal/ social skills. The mentioned soft skills were chosen by recognizing drastically overlapping skills that all seemed to fit the pattern of being strongly suggested by many sources and educational institutions. The challenges that can be encountered when conducting such research is that soft skills are "intangible and difficult to measure because they involve personal and subjective attributes." (Jessy 2009)

Methodology

A mix of qualitative and quantitative aspects were combined to formulate a survey to collect primary data for this research study. A mixed method research covers multiple bases and can often allow one to build more thorough research results. This is because generally, mixed method research allows for investigation of more complicated topics instead of strictly just patterns or matter of opinions. With this approach for the survey, respondents had an opportunity to share thoughtful opinions, evidence, and insight into their statistical answers.

The respondents of the study were student interns from Cal Poly's CM program. The survey responses were collected via a generous mass email sent out by the Cal Poly CM department to all current Cal Poly CM students. The respondents had to formulate several rankings of the importance of different types of soft skills and then also give feedback using logic, reasoning, influence, and personal experience to support their rankings. The goal of this survey was to find overlapping patterns to find some significant common ground as to what soft skills are best to possess by both construction industry professionals and CM student interns. The data collected was based on a simplified version of the complete survey as shown in Table 1 which was then compiled into different forms of visual statistical figures.

Table 1. Distributed Cal Poly CM Student Survey Questions

#	Question
1	1. How many Internships have you had? 1 2 3 4+
2	2. What was/ were your role(s) during your Internship(s)?
3	3. Rank yourself in each of these soft skill categories from most developed to least developed: Communication Skills Problem-Solving Skills Time Management Skills Leadership Skills Interpersonal/ Social Skills
4	4. Rank these soft skill categories in accordance to importance to the CM industry: Communication Skills Problem-Solving Skills Time Management Skills Leadership Skills Interpersonal/ Social Skills
5	5. Briefly explain why you believe the soft skill category you chose is most important to the CM industry.
6	6. Rank which soft skill category you relied on most during your time as an intern: Communication Skills Problem-Solving Skills Time Management Skills Leadership Skills Interpersonal/ Social Skills
7	7. Briefly describe how you relied on these skills the most and how you may have applied them.
8	8. Come up with your own list of top 5 specific soft skills to possess as a CM intern.
9	9. Rank your top 5 list from the previous question in accordance to importance to the CM industry.
10	10. Briefly explain how your specific experiences as an intern could have affected your perspective on this survey.

Results/ Analysis

A total of 42 respondents participated in the study. A large majority of the respondents have demonstrated a significant pattern in ranking certain soft skills higher and lower than others. As mentioned before, soft skills are not organically explored within traditional construction practices, so it was refreshing to see such unique variety in intern experiences to come around and reach a decent common ground. Based on the 5 soft skills categories focused on this study, the respondents evaluated and rated their own soft skills profiles. This was to assess the skills they currently possess and possibly find where current interns feel underdeveloped and gauge where investments can be made to strengthen these indicated soft skills to improve the incoming workforce. The respondents also rated the most important soft skills required as a general whole in the construction industry and similarly as an intern specifically. Communication, time management, and problem-solving skills were the top three in the overall ranking. More obvious, Communication skills carried the highest value amongst the respondents. Since this was lengthy survey, the results are best analyzed individually to understand the overall results.

Question #1

Figure 1 expresses the brief results collected from question #1 which introduced respondents to answer how many internships they have had the pleasure of experiencing. This simple question was not relevant to determine patterns in the results, but more so to have potential respondents easily identify if they could properly be able to answer this survey as you must have completed at least one internship to even participate.

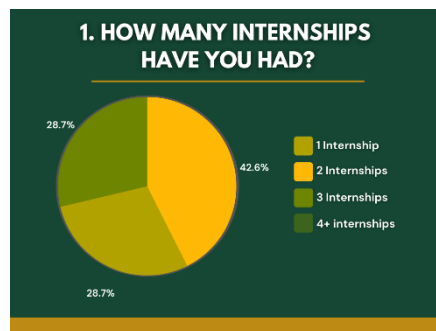


Figure 1. Cal Poly CM Student Internships

Question #2

Figure 2 demonstrates compiled results from question #2 using a simple chart to determine the type of roles the CM interns engaged in. More so, this question was utilized to get respondents to warm up their memory and think about what exactly their individual internship experiences consisted of. One could also take these results one step further and use them to analyze if your roles significantly influence the certain type of soft skills you require and desire to have in the construction industry.

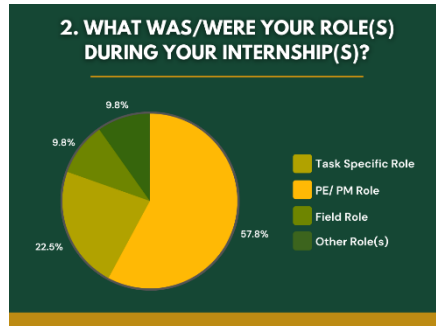


Figure 2. Student's Roles During Internships

Question #3

Figure 3 summarizes rankings obtained from question #3 which is based on the respondent's ratings on their own soft skill profile. The results show mixed impressions about most of the soft skills, but most respondents feel at least average to excellent in their communication skills. The rest of soft skills could have been a toss up between most of them as you can't really quantify the level between each individual ranking. For example, you can't really tell how close or far respondents may rate their 2nd choice vs their 3rd choice.

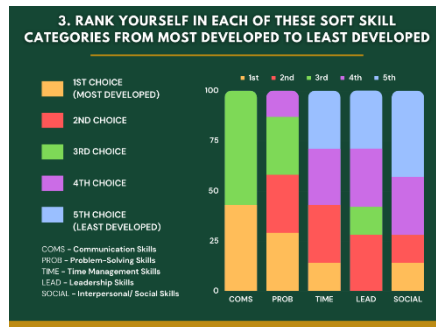


Figure 3. Student's Ranking of Most Developed Soft Skills

Question #4

Figure 4 identifies important results from question #4 which emphasizes a ranking on the most important soft skills to possess in the construction industry. From a quick glance, one can conclude from the bar graphs that communication skills and time management skills are clear favorites to possess, with problem-solving skills falling not too far behind. Leadership skills and social skills didn't garner much support.

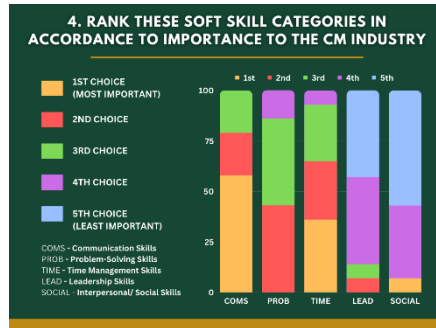


Figure 4. Student's Ranking of Most Important Soft Skills in Industry

Question #5

Figure 5 displays some key points as to why the respondents chose their top soft skills from the previous question. The key points were constructed by identifying overlapping opinions amongst respondents and choosing the most popular and most appropriate to fit the category. To summarize the key points, Communication skills in the construction industry are used as a foundation for other skills, is essential to develop and strengthen relationships, and ultimately, helps all parties be on the same page when it comes to projects. Time management in the construction industry ensures projects are delivered on time and within budget, leads to a healthy reputation among clients and as construction firm itself, and lastly, is second to none when it comes to having good profitability of any and all projects.



Figure 5. Student's Supporting Their Top Choices from Previous Ranking

Question #6

Figure 6 takes a step back into a ranking question where respondents rate the soft skills they used more during their internships specifically so it was not a matter of opinion, but more so their actual experience as they took from it. The results show a near equal level on reliance on communication skills and problem-solving skills during most of each respective respondent's internships.

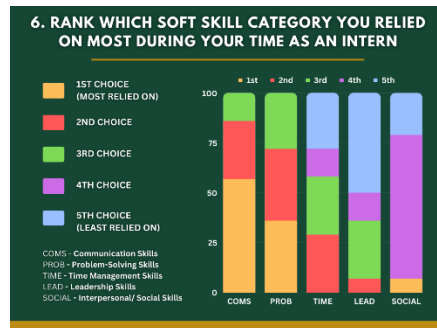


Figure 6. Student's Ranking of Soft Skills Relied on Most as Interns

Question #7

Similar to Figure 5 above, Figure 7 utilizes the same process to conclude a set of key points for each the top two soft skills from the previous question as to why they were utilized the most during CM student internships. During internships communication skills are important to ensure to obtain information for one to perform well, ask questions to eliminate confusion and gain appropriate feedback, and to build trust and gain respect becoming interactive amongst other team members. Problem-solving skills are used by interns to adapt to their new environment, need less babysitting



Figure 7. Student's Supporting Their Top Choices from Previous Ranking

Question #8

Figure 8 outlines the 5 most common specific soft skills/ traits to possess as a CM intern. This question had complete freedom to pick any soft skill the respondent may think as necessary and appropriate. Surprisingly there was plenty of similar answers which allowed for the infographic depicting the 5 most common, yet important specific soft skills to possess as CM interns apart from the ones focused on this study. These top 5 soft skills are a strong work ethic, adaptability, verbal communication, collaboration/ teamwork, and self-presentation.



Figure 8. Student's Top 5 Most Popular Specific Soft Skills to Posses as a CM Intern

Question #9 & Question #10

Figure 9 shows a brief breakdown of the last two questions which were not created to have too much impact on the survey nor study, but to simply allow for more information to be gathered for future reference. Question #9 is an addition to question #8 and concludes strong work ethic and adaptability were on at least over 70% of the respondents lists from the previous question which is pretty significant given the question had complete freedom of choices. Question #10 takes a different approach by asking respondents to reflect on their experience as interns and how different environments, influence, and possibly bias could have impacted how they answered the survey.



Figure 9. Key Points from Results of Question #9 & #10

Conclusion

This study investigated the perception and value of soft skills for CM interns and construction professionals alike. Soft skills in the construction industry are essential for not only success, but efficiency, employability, retention. Communication, problem-solving, time management, leadership, interpersonal/ social skills served as the key basis of current soft skills in the construction industry. It is imperative that CM interns reflect on and develop these skills as they can become great assets in their respective careers.

The survey conducted through this study reflected a mixed method approach, and the results of this research study can be used as a new knowledge source, which can be further explored in future research and studies. And to summarize the main takeaways from the analysis of the data collected, It is crucial to hone in on both communication and problem-solving skills as a CM intern and to also

further master communication skills and maximize efficiency skills through time management as you gain more experience as an industry professional. It is imperative that CM interns reflect on and develop these skills as they can become great assets in their respective careers.

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