A Guide to an Effective Cal Poly Construction Management Internship

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Internships provide a multitude of opportunities for students to learn and apply curriculum concepts. Internships are a window providing students with a glimpse of industry standards and practices. For employers, internships can provide value in the form of assistance with documentation, providing a fresh pair of eyes, and providing potential hires. That being said, currently there is no common set of internship standards, producing varying results for interns. The purpose of this research paper is to provide a professional blueprint for current and future CM companies to integrate in their internships. Student surveys and industry professional interviews were conducted to gain student input and insight into what employers are expecting from their interns. A key finding within the study demonstrates that students believe communication is the most useful skill to learn in an internship. Interestingly, industry professionals see communication as one of the biggest challenges in an intern’s experience. Communication within the construction industry is something that cannot be practiced in the classroom and comes with industry experience. How can internships adjust to provide students the space to practice communication and improve in other areas? This paper analyzes which elements of an internship can be modified to allow students to leave with an effective internship.

Key Words: Internships, Construction Management, Student Interests, Industry Professionals, Mentorship

Introduction

The concept of internships first began in the European trade guild tradition in which individuals who are masters in their craft take on a less experienced individual under their wing (Maertz, 2005). Since then, internships have become intertwined with career development and university curriculum. Internships provide a multitude of benefits for both the students and the employer. On one hand internships provide students with hands-on experience in the workplace that is applicable to their studies. On the other hand, internships provide scouting opportunities for construction companies looking for future employees. Internships in essence are about cultivating relationships. Unfortunately, there is no common set of internship standards or best practice guidelines for the construction industry. The lack of structure produces varying experiences for student interns and employers. In some cases, some construction companies have a well thought out itinerary for the intern in which the intern experiences different sectors of the company and is pushed to accomplish tasks to build on pre-established skills. On the other hand, some companies are unclear what to assign to an inexperienced intern and the intern comes out with an inefficient experience. Lack of structure in an internship can result in the intern performing meaningless tasks or being left with too much downtime.
The goal for this research paper is to provide a professional blueprint for current and future CM companies to integrate in their internships. Through student surveys and interviews from industry professionals, readers should leave with an understanding of what practices facilitate a meaningful internship experience for students, allowing them to learn about the industry. The paper should also provide useful feedback for companies, helping employers to cultivate more valuable future employees.

The purpose of the student questionnaire survey is to determine the following:

- To determine which areas of a student’s internship promoted the most student learning.
- To determine if prior training improves student internship satisfaction.
- To determine what students believe is the optimal percentage of time spent out in the field.
- To determine which skills students believe are most useful in an internship.
- To determine if giving students the opportunity to network is beneficial to their internship success and satisfaction.

The purpose of the employer interviews is to determine the following:

- To determine which areas of an internship promote the most student learning.
- To determine if the individual has had an internship themselves and what could have been improved.
- To determine which areas of expertise and experience should be covered by the internship, so that it maximizes value for both the intern and the company.
- To determine if regular feedback on an intern’s progress is vital to the success of the internship.

The limitations of this research paper pertain to the small sample size of the student respondents and the small sample size of the industry professionals interviewed. For a clearer and better understanding of student interests and pitfalls within construction internships a greater number of participants is required. Additionally, to gain a better understanding of the views of industry professionals on internships more interviews will have to be conducted. It also may be helpful to vary the companies and position of the interviewees to gain multiple perspectives on the subject.

**Literature Review**

For students, their curriculum teaches them about theoretical aspects of the construction industry. When going out into the actual workforce students may experience a lack of preparation or knowledge about certain areas of the industry. Internships are the perfect tool to bridge the gap between concepts learned in the curriculum and actual industry practices. In fact, “interns are not only learning about the business, but learning how to function effectively within the context of an organization and with other employees” (Bandow, 2015, p.5). Typically, internships last between 2 to 3 months, making it crucial to maximize the learning opportunities during the time period.
For a student to leave with an effective internship experience, “employers should structure roles to challenge the interns’ skills. While this may make the internship more difficult, clear goals, guidance and supported activities will assist in helping interns complete work products” (Bandow, 2015, p5). In other words, an internship should not solely focus on accomplishing tasks based on skills the interns already have, rather the internship should focus on providing new learning experiences. Challenging the intern may require more work and effort on behalf of the intern as well as the employer. Therefore, establishing clear goals, directions, and expectations at the beginning of the internship can greatly influence the outcome of the individuals’ experience. According to a study, “interns also requested that employers communicate with greater detail and clarity when giving directions, not only about the work but in general how to do things better. More direct contact, mentoring and guidance is needed instead of simply task delegation to the interns” (Moghaddam, 2011, p.6).

It is important to set up a clear and consistent line of communication to allow the interns to ask questions and clarify tasks being performed. One mode of communication that is greatly valued by interns is feedback. (Bandow, 2015) Constructive and timely feedback throughout the internship allows for the student to assess areas of improvement and adjust their performance. On the other hand, providing feedback after the internship does not allow interns to focus on their improvements while on the job. Improving student satisfaction and providing them with a good internship experience can create a good reputation for the host organization, creating an appeal for future employment.

**Methodology Part A – Student Survey**

The research strategies for this project are broken into two components which include both qualitative and quantitative methods. For the first component, a quantitative method was used in the form of an online questionnaire survey sent out to Cal Poly Construction Management students. The survey will help gain an insight into student internship experiences. The data collected from students will help draw conclusions on best practices as well as areas of an internship that need restructuring.

The research procedure included an 11-question survey sent out to all Cal Poly Construction Management students over the span of April to June of 2023. Over that time period more than 30 respondents completed the survey and the data collected will help analyze what aspects of an internship bring the most success and what areas need to be improved. The questions within the survey are comprised of 3 multiple choice questions, 3 fill-in the blank questions and 6 Likert scale questions. The questions used in the survey are as follows:

1. How many internships have you completed?
2. What types of internships have you completed?
3. Do you believe you were trained sufficiently to complete the task asked by the employer?
4. Did you receive constructive feedback and guidance from your supervisor or mentor throughout your internship?
5. What percentage of time during the internship did you spend out in the field?
6. What percentage of time do you believe student interns should spend out in the field?
7. Were you given the opportunity to network with other employees or interns during your internship? If so, do you believe it helped you develop or improve your skills?
8. Do you believe you were given enough responsibilities as an intern?
9. Do you think your internship(s) could have been more organized?
10. What types of skills do you think would be most useful to learn on an internship?
11. For prospective CM students’ what course of action do you recommend for future internships?

**Methodology Part B – Industry Interviews**

For the second component, a qualitative approach was used by interviewing 5 industry professionals. The individuals who were part of the interview process work for various construction companies and differ in positions within their respective companies. The interviews are semi-structured allowing for an open dialogue. An email was sent out to each of the 5 individuals asking for their consent to be a part of this research project. The interviews lasted between 15 to 20 minutes and were held between the months of July until the end of August. The interviews will provide insight into what employers are expecting out of their interns as well as sharing insight into their own internship experiences if applicable.

The questions used in the interview process are as follows:

1. Have you had an internship yourself? If so, can you please recount some of your own experiences. What were some positive aspects and negative aspects of your experience.
2. What specific aspects of the internship your company offers do you feel provide students with the most value from a learning perspective?
3. What specific student goals and overall internship goals do you establish before beginning the internship?
4. What percentage of time should students spend out in the field? Can you elaborate on the thought process of this decision.
5. From your perspective what are some of the biggest challenges interns experience?
6. What intern experiences provide the most value to your company?
7. During internships, how does your company decide how to utilize the interns’ time?
8. How important is feedback on an intern’s progress? Do you prioritize that within your company? And if so, how do you gather feedback?
9. How often are you checking in with the intern to discuss challenges or areas of improvement?
10. Are your internships designed to have the student focus on one area of the company or are they exposed to different aspects of the company?

**Research Results & Analysis Part A**

The following information and diagrams are compiled from the results of the student survey. There were a total of 31 respondents for each of the questions. The answers of the survey are as follows.

*Question 1*: How many internships have you completed?
The information for the question is used to gauge the experience levels of the various Cal Poly construction management students. The chart shows that 44% of survey participants have completed only 1 internship, 28% of respondents have completed 2 internships, 25% of respondents have completed 3 internships, and 3% of respondents have completed 4 or more internships. For construction companies this information is useful in determining what type of internships should be geared toward students who have at least 1 internship. To rephrase, most interns have minimal experience, and it is crucial that they leave with an effective and positive experience.

Question 2: What types of internships have you completed?

Many different types of construction internships exist to provide students a variety of opportunities within the construction industry. The information gathered from the question is being used to narrow down the focus point of the internship guide. The bar chart above demonstrates that 80% of students have interned under the position of a project engineer, roughly 10% of respondents have interned as an estimating/scheduling intern and 3% of respondents have interned for the apprenticeship program. The
information pulled from this question demonstrates that the majority of students are seeking internships under a project engineer role. This information should be used to schedule both office and field tasks for the intern to perform.

*Question 3:* Do you believe you were trained sufficiently to complete the task asked by the employer?

![Figure 3: Percentage of Students who were sufficiently trained.](image)

The following question is used to determine if proper training is correlated to the efficiency and success of the student’s internship experience. The results demonstrate that 19 out of 31 respondents (61%) felt that they had an adequate amount of training to complete the tasks asked for by the employer. On the other hand, 5 out of 31 (16%) of respondents felt as though they were not properly trained to complete the tasks given. The chart demonstrates that 3 out of 31 respondents (13%) felt as though their employer went above and beyond in terms of training required for their task. Lastly, 3 out of 31 respondents (9%) felt as if their training was neutral. It is crucial for the intern to understand what they are doing before they begin. Lack of training can cause confusion and leave the intern frustrated with the task at hand, impacting their experience. This question helps demonstrate that some employers need to apply more effort into training their interns. Although, it is positive to see that the majority of construction companies are providing their interns with proper training.

*Question 4:* Did you receive constructive feedback and guidance from your supervisor or mentor throughout your internship?

![Figure 4: Percentage of Student who received Feedback from the Employer](image)
According to research by Diana Bandow “students valued timely and immediate feedback on their performance while on the job, as providing feedback after the internship did not allow interns to focus on improvements while on the job” (Bandow, 2005, p.6). The purpose of Bandow’s research is to determine whether regular feedback on a student’s progress is beneficial to their success in the internship. The results demonstrate that 18 out of 31 respondents (58%) have an adequate amount of feedback from their supervisor. Similarly, 5 out of 31 respondents (16%) have more than an adequate amount of feedback. On the other hand, 4 out of 31 (13%) respondents stated that their supervisors gave a neutral or less than adequate amount of feedback. According to this survey, the majority of companies provide their interns with an adequate amount of feedback for the interns to improve their skillset.

Question 5: What percentage of time during the internship did you spend out in the field?

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Figure 5: Average time spent out in the Field

The following question is used to determine the correlation between time spent out in the field and the success of a student’s internship. In other words, to optimize the internship experience should an intern spend the majority of their time working in an office or working out in the field? The purpose of this question is to find an optimal percentage of a student's time out in the field. The results from student input demonstrate that the average amount of time spent out in the field is 44.5%. Out in the field is where interns are able to see firsthand the processes of construction and apply what is being learned in the classroom.
Question 6: What percentage of time do you believe student interns should spend out in the field?

![Question 6 Table]

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Figure 6: Average Perceived time spent out in the Field

Similar to the question above, the purpose is to determine the correlation between time spent out in the field and the success of a student’s internship. More specifically, the purpose of the question is to compare the student’s actual time spent out in the field versus their perception of time spent out in the field. The results show that students believe that interns should spend an average of 56% of their time out in the field. Put another way, students want to spend more time out in the field than they currently do. This is important for construction companies as their activities should revolve around field tasks for at least half of the intern’s time.

Question 7: Were you given the opportunity to network with other employees or interns during your internship? If so, do you believe it helped you develop or improve your skills?
Sometimes valuable pieces of information come from networking with other employees within the company or comparing experiences with other interns. The following question is used to determine the correlation between giving interns the opportunity to network and improving their skills. The idea is that giving interns the opportunity to network will allow them to acquire valuable information from experienced colleagues and interns. The results demonstrate that 45% of respondents believed that their internship had an adequate amount of networking opportunities. Roughly, 29% of respondents had more than an adequate amount of networking opportunities and believed it developed their skills. On the other hand, 19% of respondents believed that they had a neutral amount of networking opportunities. Lastly, 6% of respondents stated that their internship severely lacked networking opportunities. Providing interns the space to discuss with other individuals within the company can be beneficial for them to decide if they see themselves within the organization. It can be beneficial for the company to network with interns to determine if the intern is a good fit for the company. Networking opportunities can take the form of company lunches and planned company activities.

**Question 8:** Do you believe you were given enough responsibilities as an intern?

The following question is used to determine if the student was given enough responsibilities during their internship. The question will help determine the efficiency or inefficiency of the internship. The results
show that 35.4% of respondents were given a neutral number of responsibilities, 29% of respondents were given an adequate amount of responsibilities and 23% of respondents were given more than an adequate amount of responsibilities. On the other hand, 10% of respondents were not given enough responsibilities and 3% of respondents lacked a definite number of responsibilities. For the 13% of respondents who lacked responsibilities it is crucial for construction companies to keep their interns engaged. Giving the intern the same task over the course of their internship limits their experience and exposure to what construction management has to offer.

**Question 9:** Do you think your internship(s) could have been more organized?

![Figure 9: Percentage of Internship Organization](image)

The following question is used to determine if structure and organization on behalf of the employer impacts the success of the student’s internship. The results demonstrate that 16% of respondents reported that their internship could have been substantially more organized. The pie chart demonstrates that 35% of respondents believe that their internship could have been slightly more organized. On the other hand, 39% of respondents believed that their internship needed no organizational improvements. Lastly, 10% of respondents reported that their internships could be less organized. Organization of an internship can be in the form of planning out activities, scheduling mentor feedback and networking opportunities. Organization within the internship helps provide structure to the intern and allows the internship to run smoothly, leaving them with a positive experience.

**Question 10:** What types of skills do you think would be most useful to learn on an internship?

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<td><strong>Total</strong></td>
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</table>
Figure 10: Responses from Students on learning opportunities for Internships

The following question allowed students to fill in a response to what they believe interns should learn in an internship. Based on the results the top responses include focusing on communication (37%), document control (23%) and reading plans (10%). This information is pertinent for construction companies in deciding what tasks to assign to interns. Communication is vital in the construction industry and takes shape in the form of email, calls, presentations, and day to day interactions. It is important to allow interns to focus on practicing and improving their communication skills. Examples of activities for interns can include calling/emailing subcontractors for bids or submittals. The other results of the questions demonstrate that interns have a desire to learn about document control. This can include RFIs, submittals, tracking logs and change orders. The last result from the question demonstrates that students are interested in learning about reading plans. Familiarizing interns with plans are a great way to understand a project. Takeoffs, submittals, and scanning drawings are great tasks to give interns.

Question 11: For prospective CM students what course of action do you recommend for future internships?

Figure 11: Future Internships

The following question is used to determine if students believe specialization or diversification of internships is best for a prospective CM student. The results demonstrate that 87% of respondents believe prospective CM students should diversify and work on different internships to develop areas of interest. On the other hand, 13% of respondents believed in specializing and working on a similar internship to develop skills.

Research Results & Analysis Part B

For further details on the responses of the industry professional interviews please see Appendix A at the end of this paper. A brief summarization of their responses can be found below.

1. I had two internships in my sophomore year. I interned at the Sacramento country transportation department. My job was to verify the yellow light duration for an intersection. Me and another intern would get a radar reading to determine the average of speed through an intersection and use the information to get an as-build of the
intersection. Great application. The other one I did was for the Sacramento Airport Planning Department. They had me as-building the irrigation system and input it into CAD. It was very repetitive and mindless. I did that every week for 16 weeks. I felt like I was there to fill in a policy. I was off in a corner. The other part of it was that they had blueprints and plan sheets and at the time they needed to be digitized. For weeks I would take these sheets and covert them for digital access. It had absolutely no value in my career. This experience has helped me to know how not to govern a student’s experience.

2. The general consensus from the industry professional demonstrates that field activities/tasks provide interns with the most value from a learning perspective. As an inexperienced intern the best way to add value is to expose oneself to the inner workings of the construction process. Get the intern out of the office to experience how the work is being performed and give the intern a window into the culture of the jobsite. Companies will differ on the types of tasks assigned to the intern. For instance, one of the interviewees interpreted internships as having an assistant PE, assigning them to go into the field, participate in RFI writing and walk the jobsite regularly. Some companies may take a different approach to field activities and assign tracking, observation, and assisting in day-to-day paperwork. This is where communication between the construction company and the intern is crucial. The company must decide how the intern can be most useful for the company to provide a positive learning experience to the intern. As an intern it is important to understand areas of interest despite having minimal experience.

3. Before the internship begins it is important to establish intern interests and determine their experience level. From there it is important to pair the intern with a mentor that best suits their experience level. As the employer, perform an internal assessment and determine where the intern can be useful to the company. The internship goal is to have the student leave with a great experience and excited about the construction industry. In other words, an internship should center itself around creating an environment of fun interactive autonomy. At the end of the summer the goal for the employer is to have the intern say, “that was a great place to work, I would carefully consider coming back there for full employment.” For companies who are not looking to hire interns, it is still in the company’s best interest to inspire and motivate students with what construction has to offer.

4. After interviewing the industry professionals, they all agree that interns should spend about 60-75% of their time out in the field. Being out in the field provides a variety of learning opportunities that cannot be taught in the classroom. To understand constructability, it is important to immerse oneself in activities of the jobsite. As an intern the jobsite allows for an individual to work alongside people who have years of knowledge and experience that are willing to demonstrate the things they do. All of the interviewees agree that field experience in the construction industry is by far the most valuable. For construction companies it is crucial to give interns the opportunities to participate and observe the interworking of the jobsite. It is equally important to gauge the intern and see if they’re enjoying their time in the field. Not all interns will want to spend the majority of their time on the jobsite.
5. From the interview responses, some of the biggest challenges interns experience pertain to communication. One of the interviewees explains, “what I’ve seen in the last 10 years is that interns struggle with being able to talk on the phone, to communicate, have conversations with people who are not their peers, and talk with leaders of the company.” Being able to communicate effectively is something that is crucial in the industry of construction. As the employer knowing that interns struggle with communication can allow the company to assign tasks that allow the intern to practice their communication skills. Writing clear and concise emails, RFIs and submittals are assignments that teach interns about basic communication within the industry. As the employer have some patience for the intern who is struggling with communication. Grant them the space to make mistakes and guide them in how to be an effective communicator. The industry professionals also observed that interns struggle with in-field application due to their lack of experience.

6. Several of the interviewees said that the connection between the intern and the company provides the most value. For most contractors the idea of having an internship is to find new recruits for after graduation. For smaller companies who cannot afford to hire people at mid-level or higher level, interns provide an opportunity for growth. Connection with the intern allows the employer to start grooming people for succession planning in the workforce. Interns also bring a fresh pair of eyes that allow for questioning of certain processes. For mentors interns can provide a better understanding of the interworking of a company. The best way to learn something is to teach it to someone.

7. Typically, a company assigns a mentor to a intern, allowing the intern to shadow the individual. Depending on the company, the day-to-day assignments of the intern may be determined by how the mentor sees fit. In this case, it is important to give the mentor some sort of structure that allows the interns to experience a variety of tasks. As the mentor it is crucial to check in with the intern and see if they enjoy and are learning from the tasks assigned. In other companies, the mentor is solely there to check-in on the intern. The company may move the intern to different sections of the company to provide them with a variety of experiences. Simply put, the intern does not have one mentor but a variety of them. In either case there should be a focal person that the intern can turn to, to communicate and update their internship experiences.

8. Feedback on an intern’s progress is crucial for their improvement long term. Although, it is hard to give feedback to interns during an 8-week internship program. Most industry professionals agree that there is a lack of a standard in establishing consistent feedback. It depends on how it is executed by the company in question and their standards. The best way to implement feedback is to establish goals in the beginning of the internship and then track the progress of those goals throughout their time with the company. For instance, an intern may say to a mentor that they want to be better at BlueBeam this summer. The manager should be checking in with the intern on the progress of their goals. All the industry professionals unanimously agree that feedback should be tracked at least once a week.
9. Almost all of the industry professionals agreed that the mentor should be checking in with the intern daily. Whether it be on the intern’s immediate task or checking in on the progress of their goals, it all improves their experience. One of the interviewees admitted to checking in at the end of the week as opposed to daily. In other words, there is no set structure for checking in with the intern and it greatly depends on the mentor’s involvement level. One interviewee had an interesting perspective when it came to checking in with the intern. They suggested having someone checking in with the intern weekly who’s not their direct report. That way if the intern is stuck doing the same task for 3 weeks they do not have to go to their supervisor and say, “this is a boring way to spend my summer.” Instead, it allows for an outside individual to intervene and get the intern to do something else.

10. This topic was very divided amongst the industry professionals. Some noted that an 8-week internship program is not long enough for the intern to cover 4 different aspects of a construction company. Simply put, the time limitation of an internship prevents students from fully immersing themselves into a new topic/area of the company. Some interviewees suggested limiting intern to two different areas of the company, allowing them to spend 4 weeks in each area. One interviewee also added that having them in only two areas of the company would make it easier to monitor progress and provide feedback. On the other hand, others noted that moving interns to different areas of the company provides the intern with a well-rounded plethora of experiences from field, to estimating, to office. Some participants felt that providing different job walks to interns can be beneficial in expanding their experience to different projects at different stages. Upon further discussion, all interviewees agreed that the intern should have both field and office experience during the internships. They also noted that scheduling a job walk to a different site is very beneficial to the intern’s experience.

**Combined Discussion Part A&B**

Internships are the perfect tool to bridge the gap between concepts learned in the curriculum and actual industry practices. Internships can benefit both the employer and the student. The results from the student survey and interviews look to improve current internship industry standards.

Based on the survey performed, the target audience for creating an internship guide is directed toward students who have completed 1 internship and are interning under a project engineer position. For construction companies this information helps narrow their target audience and gives them a window into the experience level of the incoming intern. The results of the student survey demonstrated that 25% of participants felt that there lacked a proper amount of training at the beginning of the internship. Lack of training can cause confusion and leave the intern frustrated with the task at hand, impacting their experience. Similarly, when asked 49% of student participants agreed that their internship could be more organized. The organization of an internship can have a substantial impact on the intern’s experience with the company and the industry of construction. Creating an environment where the intern has proper training, ample opportunities to learn and has sufficient responsibilities can be challenging. Although, when discussed with industry professionals they noted that before the internship begins it is important to establish intern interests and determine their experience level. Establishing intern interests can
be done with a forum completed on their first day, in which the company asks various questions to understand the intern’s goals, interests and prior experience. From there it is important to pair the intern with a mentor that best suits their experience level. As the employer, perform an internal assessment and determine where the intern can be the most useful to the company and if the company is looking for a potential hire. For companies who are not looking to hire interns, it is still in the company’s best interest to inspire and motivate students with what construction has to offer. Performing these tasks creates good communication between the employer and the intern and demonstrates that the company is organized.

Having a clear picture of who the target audience is allows for construction companies to understand what types of activities to assign interns. As a project engineer their tasks should revolve around both the field and the office. According to student input, interns currently spend about 44.5% of their time out in the field. Although, students believe that interns should be spending around 56% of their time out in the field. In other words, students want to spend more time out in the field. As an employer assigning interns more field experience only benefits their understanding of the construction industry. The general consensus from the industry professional demonstrates that field activities/tasks provide interns with the most value from a learning perspective. In addition, some industry professionals agree that intern field documentation can provide a company tremendous value. All industry professionals agree that interns should spend about 60-75% of their time out in the field. Being out in the field provides a variety of learning opportunities that cannot be taught in the classroom. To understand constructability, it is important to immerse oneself in activities of the jobsite. As an intern the jobsite allows for an individual to work alongside people who have years of knowledge and experience that are willing to demonstrate the things they do. All of the interviewees agree that field experience in the construction industry is by far the most valuable for the longevity of one’s career.

Interestingly, when asked what students believed future interns should learn in an internship, 37% of respondents answered communication. Similarly, industry professionals agreed that one of the biggest challenges interns face deals with communication. Clearly, students are advocating to practice and improve their communication skills. Communication is vital in the construction industry and takes shape in the form of email, calls, presentations, and day to day interactions. It is important to allow interns to focus on practicing and improving their communication skills.

**Conclusion & Future Research**

The information received from both Construction Management students and industry professionals will benefit construction companies in creating a structured program that can promote learning for student interns and add value to the company. The biggest takeaways from the survey and interviews are as follows:

- The general consensus from the industry professional demonstrates that field activities/tasks provide interns with the most value from a learning perspective.
- Students believe that future interns should learn about communication. Industry Professionals see communication as one of the biggest challenges in an intern’s experience.
- Interns felt their internships could have been organized in a more efficient way.
• Before the internship begins it is important to establish intern interests and determine their experience level.
• Feedback may be difficult to give during an 8-week internship program. Although, establish goals at the beginning of the internship and check in weekly.
• Students believe future interns should diversify and intern for different companies.

For future research on the topic of internships investigate specific details that result in direct student learning. It may benefit the study to have a larger selection of industry professionals and a larger selection of student surveyors. Future research on the topic can include:
• Getting feedback from students outside of the Cal Poly Construction Management Program.
• Receiving feedback from industry professionals who have had an internship themselves.
• Focusing the questionnaire on determining what components of an internship are inefficient.

References


Maertz P., Carl “Plan for the Most Effective Internship Programs.” HR Focus., vol. 82, no. 9, 2005, pp. 7–9.

Appendix A

Industry Individual #1
Position within Company: Director of HR
Response:

1. What specific aspects of the internship your company offers do you feel provide students with the most value from a learning perspective?
   - “There should be a robust internship program with opportunities to allow students to realize that they are in the right field. It provides value to determine if a student is going to be engaged in this type of work after they graduate. It should provide information that the student can take back to the classroom. Whatever you’ve seen on the project should be applicable to topics learned within the classroom. It’ll add value to your education.”

2. What specific student goals and overall internship goals do you establish before beginning the internship?
“We look at where the students are coming from and what year they’re in to determine their experience level. We establish who can be their mentor here. We try to pair the student with an mentor that best suits their experience level. The goal is to get field and office experience over the course of a summer. A huge goal for me is to make sure we have some structure in place for the interns. In my experience, with other companies I’ve worked for they had a very dialed in structure. The intern would spend 4 weeks here and 4 weeks there. It is important to have a leader guide the internship in and throughout the summer to make sure that they are getting the experience that they thought they’d get.”

3. What percentage of time should students spend out in the field? Can you elaborate on the thought process of this decision.
- “I believe it should be 60% of their time. The reason being is that it’s a visual. If you’re behind a desk working on Bluebeam all day, you’re not understanding constructability and how work is run out in the field. It is very important for a student’s growth in the industry. It is going to be relevant to what you’re learning in the classroom. Building your knowledge and working with people who have years of knowledge that are willing to show you why they do the thing they do. Field experience is so valuable in the industry.”

4. From your perspective what are some of the biggest challenges interns experience?
- “Communication. What I’ve seen in the last 10 years is that interns struggle with being able to talk on the phone, to communicate, have conversations with people who are not their peers, and talk with leaders of the company. Many are so used to texting or whatever. In the industry you might be called to talk to subcontractors on the phone to get estimates, submittals or whatever it may be. Some interns I’ve worked with in the past years were afraid to talk on the phone. Business writing is a huge piece that is missing from students coming in. It is very pertinent to RFI and submittals. It is very important to understand what you’re writing.”

5. What intern experiences provide the most value to your company?
- Connection. For all contractors, the idea of having an internship is to find new recruits for after graduation. As the company you are providing opportunities for students to learn. What we’re really looking for are those people we can hire after graduation. We can’t keep hiring people at mid-level or higher level. We cannot afford it. We have to start grooming people for succession planning in the workforce. It can also supplement our work. Those extra pairs of eyes and hands can help with the work.

6. During internships, how does your company decide how to utilize the interns’ time?
- Shadowing somebody and making sure their utilizing interns time as best as possible. Make sure their time is filled with work.

7. How important is feedback on an intern’s progress? Do you prioritize that within your company? And if so, how do you gather feedback?
- When working with your mentor they should be providing you feedback on things to read or things to look at, things that you can do on your own. The mentors should be telling you good job on this or do this in this manner for instance. To improve our program, we have our end-of-summer evaluations, in which we’re gathering feedback. It is very helpful to us but I think it’s very helpful to interns because it make you think about how your summer was and how it went. - What we haven’t done is give each student evaluations. I know one company that I worked at did that and it was disastrous. They were very harsh, and students walked away deflated. It’s supposed to be constructive and reinforce their liking for the industry.

8. How often are you checking in with the intern to discuss challenges or areas of improvement?
Day by day. As a company we need to make sure that the mentors understand that is their role. The need to be discussing any challenging areas for a student and how to improve. As a mentor you're basically a teacher.

9. Are your internships designed to have the student focus on one area of the company or are they exposed to different aspects of the company?
- Different aspects of the company. One of our mentors prioritizes giving students a well-rounded plethora of experiences from field, to estimating, to office. We have that rotation as well. I think that most general contractors do their best to rotate them through. Some of the best programs with large GC’s I’ve worked with had interns sit in on a meeting, where they had multiple learning experiences. We had a PM talk about project management. Another month we had a superintendent talk about the superintendent role. We also had a job walk where we had a bus tour of all the company’s large projects. We had an intern appreciation lunch in which we’d have the interns get up and speak to a group of leaders in the company about their internship. It serves the students well and the company. It helps the company to really see the different types of students coming out of college and to see the aptitude and desire to learn. Companies are watching students in those events. Close out with job walks

Industry Individual #2
Position within Company: Project Manager
Response:

1. What specific aspects of the internship your company offers do you feel provide students with the most value from a learning perspective?
- The onsite tasks. I’m a big believer in getting out of the office and spending as much time on the jobsite, getting to know how the work is done. It also gives you a window into the culture of the jobsite.
2. What specific student goals and overall internship goals do you establish before beginning the internship?
   - We currently do not have a super formal internship process. Although I would say that my two biggest goals would be that the intern enjoys the summer because I believe that internships should get people to be excited about the industry they are getting into. As opposed to being just a summer job. The other goal would be to teach the interns as much as possible. Don’t pigeonhole them on one project for the summer. Try to circulate them around the company and try to get them different looks.

3. What percentage of time should students spend out in the field? Can you elaborate on the thought process of this decision.
   - I would say about 75%. As much as I would like to say 100% field time there is definitely value in getting in the office and learning about estimating. Ultimately before an individual starts, they should be familiar with all parts of the company.

4. From your perspective what are some of the biggest challenges interns experience?
   - Often times interns are left performing the same task over their 8 weeks. And then by the end they realize that oh they didn’t really learn a lot. I think another thing would be not to be nervous. I think that everyone comes in with a little bit of nerves but as soon as people can get over those.

5. What intern experiences provide the most value to your company?
   - Any time you get someone who has common sense with a fresh pair of eyes. Sometimes they’d ask a question and it’s good to have things questioned. Like why do we do this. And then you realize the interworkings of a process. I would say the best way to learn something is to teach it to someone. Especially for me being younger there is a lot of value there for me and the intern. Our internship program acts like a very early on interview process for the company.

6. How important is feedback on an intern’s progress? Do you prioritize that within your company? And if so, how do you gather feedback?
   - It’s pretty hard to give feedback to the intern just because the internships are typically 8 weeks. It’s hard to track progress when you have the interns jumping around different aspects of the company. I would say that it does help the company decide who we want to hire.

7. How often are you checking in with the intern to discuss challenges or areas of improvement?
   - Pretty much daily. Theoretically, someone who’s not their direct report needs to be checking in with them at least once a week. That way if the intern is stuck doing the same task for 3 weeks they don’t have to go to their supervisor or superintendent and be like hey this is a super boring way to spend my summer. It allows for an outside individual to intervene and get the intern to do something else.

8. Are your internships designed to have the student focus on one area of the company or are they exposed to different aspects of the company?
   - For first time interns with the company, we prioritize moving them around and getting to know different aspects of the company. We really want to them get to know what we’re all about. It also provides them to comes to us and say hey I really liked this. And then the next time we can gear the internship more to their liking and potentially hire them under that division.

Industry Individual #3:
Position within Company: Senior Project Manager
Response:
1. Have you had an internship yourself? If so, can you please recount some of your own experiences. What were some positive aspects and negative aspects of your experience.
   - I did two internships in my sophomore year. I interned at the Sacramento country transportation department. So, my job was to verify the yellow light duration for an intersection. Me and another intern would get a radar to get an average of speed through an intersection and use the information to get an as-build of the intersection. Great application. The other one I did was for the Sacramento Airport Planning Department. They had me as-building the irrigation system and input it into CAD. It was very repetitive and mindless. I did that every week for 16 weeks. I felt like I was there to fill in a policy. I was off in a corner. The other part of it was that they had blueprints and plan sheets and at the time they needed to be digitized. For weeks I would take these sheets and covert them for digital access. It had absolutely no value in my career. This experience has helped me to know how not to govern a student’s experience.

2. What specific aspects of the internship your company offers do you feel provide students with the most value from a learning perspective?
   - The intent with our company is to hire interns. Ideally, we want to get that two-year left student. Our goal is for the intern to learn about the company and what we do. Demolition is not widely talked about in school. The first year of a two-year term would be to do a rotation and get exposure to everything that demolition is. That would include estimating, fieldwork, materials processing, and safety. When we talk about learning we concentrate on rotation, focus and sponsorship by a tenure employee. It’s about providing resources for the individual with the focus of future employment.

3. What specific student goals and overall internship goals do you establish before beginning the internship?
   - The internship goal is to have the individual leave with a great experience. That means creating an environment of fun, interactive autonomy. We don’t want the intern to feel as if we have them just to get off a box. As a company we try to make the experience fun by implementing lunches, field trips, baseball games, sponsorship etc. We really want them to be excited about the industry they’re going into.

4. What percentage of time should students spend out in the field? Can you elaborate on the thought process of this decision.
   - In my opinion the earlier you get your field experience the better and more well-rounded professional you’ll be. Early in the career at least 50%. I would probably say 75%. You’ll be a better estimator if you understand the equipment, what the problems are, and the unforeseen. It sometimes depends on the individual. You have to accommodate them. I would say 50% for the first 2 to 4 years.

5. From your perspective what are some of the biggest challenges interns experience?
   - Often time it’ll be an intern’s first time in the field. And sometimes it can be awkward and overwhelming for them. It’s a whole different dynamic than they’ve ever faced in the workforce. I think that their biggest challenge is to develop those environmental expectations. It’s a transition.

6. How important is feedback on an intern’s progress? Do you prioritize that within your company? And if so, how do you gather feedback?
   - We introduce a sponsorship to that individual. It is the responsibility of the sponsor to check in with the intern at least once a week. And the sponsor is there to ensure that the interns’ experience is one of value and to make sure that their assignments are on par with the company’s expectations. They are also there to check in on the interns’ challenges. At the end of the
internship, we always perform an exit interview. Verbal communication is what we rely on. We could do a mid-summer survey, but we have not implemented it yet. We encourage interns to be honest with their feedback and sometimes it isn’t always positive. To the company that is still very valuable information.

Industry Individual #4:
Position within Company: Project Manager
Response:
1. What specific aspects of the internship your company offers do you feel provide students with the most value from a learning perspective?
   - The free form nature of putting you in the field to explore your interests. As opposed to having you engineered to a single position as an admin. What I’ve interpreted internships as is basically to use this person as an assistant PE and have them go into the field, participate in RFI writing and walk the jobsite regularly. You are a part of this job and you are a part of this team. As part of that we are able to use interns as we see fit. In other words, how can they be most useful for the company as well as useful in providing experience to the intern.

2. What specific student goals and overall internship goals do you establish before beginning the internship?
   - It’s a quarry to the interns in what they are trying to get from their experience. On the other hand, the company does need to take a selfish approach and assess where they need the assistance. It depends on the interns and where they want to be. Do they see themselves on the project management side or the super intendent side of things? It is very dependent on the students’ own interests and goals.

3. What percentage of time should students spend out in the field? Can you elaborate on the thought process of this decision?
   - I think 100% of the time. As an intern you are going to learn the most out in the field. In the classroom you are learning the business side of things. The applicable part of what we do takes place in the field. You can learn what you learn in the office in the classroom. You cannot learn the infield stuff in the classroom.

4. From your perspective what are some of the biggest challenges interns experience?
   - I would assume a lot of intern struggle with the in-field application due to their lack of experience. A lot of them may come at it from a practical application type person. There’s typically is some other feeder that draws people into construction. Being out in the field shows you the nitty gritty.

5. How important is feedback on an intern’s progress? Do you prioritize that within your company? And if so, how do you gather feedback?
   - Feedback is critical. It depends on how it is executed by the company in question and their standards. From my personal perspective I try to give feedback on a weekly basis or as much as possible. Although there are no guidelines for feedback from upper management. It is not companywide. There is no instruction on what do to with you, or quarry on how well the individual performed. It is very based on the supervisor.

6. How often are you checking in with the intern to discuss challenges or areas of improvement?
   - Regularly. For me personally it would be on a daily basis.

7. Are your internships designed to have the student focus on one area of the company or are they exposed to different aspects of the company?
- My intent would be to give the intern a breath of experience. But that is not shared companywide. We try to give interns both office and field experience as well as move them from one jobsite to another.

Industry Individual #5:
Position within Company:
Response:

1. Have you had an internship yourself? If so, can you please recount some of your own experiences. What were some positive aspects and negative aspects of your experience.
   - I used that information in Geotech from my first internship over the course of my career. “One positive aspect of my internship was learning how to manage my billable time and be efficient. Another aspect that I learned was how to be a good mentor, which I took further into my career. Learning the value of mentorship was a big takeaway from that experience.”

2. What specific aspects of the internship your company offers do you feel provide students with the most value from a learning perspective?
   - Field activities in general include tracking, observation, and assisting in day-to-day paperwork. When you are young the best way to learn is to start adding value. Field experience is the best way to comprehend and add to that value. When you are starting out you don’t necessarily know what you are looking at in the drawings. It’s better to be out in the field where you can be of value. For instance, a foreman can say here are a bunch of tag and scan them to be added to a shared drive. Yes, the task at first may seem repetitive but it is still adding value.

3. What specific student goals and overall internship goals do you establish before beginning the internship?
   - When my intern got to work, I told him my main goal is to have a fun and positive experience over the summer. Obviously, they are there to learn but we want them to walk away with a sense of pride and joy in the profession. It also means that hey if you don’t like being in the field, I can put you on something else. At the end of the summer, we want the intern to say “that was a great place to work. I had fun. And I would carefully consider coming back there for full employment.”
   - We are investing a lot of time and effort into the interns and ideally, we want them to come back.

4. What percentage of time should students spend out in the field? Can you elaborate on the thought process of this decision.
   - Somewhere between 60 – 75% field and 40 to 25% office. It really depends on the intern because some may come to you and say, “hey all I want to do is estimating.” We as their supervisor have to gauge it to their expertise and liking.

5. From your perspective what are some of the biggest challenges interns experience?
   - Internships in general are not performed well by the upper management of the company. A lot of the time interns don’t get to do what they want to do and instead are neglected. What we should do is check-in with the intern and ask them: What do you want to do? Are you enjoying the tasks given?

6. What intern experiences provide the most value to your company?
   - Field document tracking, field activities. A lot of paperwork that needs to be reviewed or scanned the interns can help out with that.

7. How important is feedback on an intern’s progress? Do you prioritize that within your company? And if so, how do you gather feedback?
   - Feedback on an intern’s progress is hard to achieve in a 2-month period. Probably the best way is to set goals in the beginning and then track the progress of those goals as well as review the progress. For instance, an intern may come to you and say I want to be better at BlueBeam this summer. The manager should be checking in with the intern on their goals.

8. How often are you checking in with the intern to discuss challenges or areas of improvement?
- As often as necessary. You want them to give them enough input for the summer. They may need some guidance on how to excel at their goals and some guidance to take back with them to school. Checking with them bi-weekly should be sufficient. It really depends on the intern.

9. Are your internships designed to have the student focus on one area of the company or are they exposed to different aspects of the company?

- I do believe it best if you keep an intern in one area of the company over the summer. I don’t think the summer internship is long enough for 3 different homes. A couple of weeks in estimating, a couple weeks in the project etc. It makes it difficult to be fully engaged in a process and learning. The plan for an intern should be to keep the intern on a project and one area of the company.