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# Evaluation of an Interview-Based Internship Class in the Construction Management Curriculum: A Case Study of the University of Nebraska-Lincoln

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**Abstract:** Internships have been shown to be impactful tools to connect students' learning in academia with real-world industrial needs. To help the students to get more out of their internship experience, some universities provide a summer internship class in which students do class assignments based on their experiences during their internship. There have been numerous studies on the benefits of internships. However, the benefits of a potential internship class for students in construction management (CM) programs at universities have not yet been investigated. This paper demonstrates the structure of an interview-based internship class and investigates its effectiveness. We have focused on the CM program at the University of Nebraska-Lincoln (UNL) as a case study. We sent online questionnaires to the intern students who took the class, students' mentors, and the professors who taught the class. The results indicate that despite some challenges to meet the requirements of the class, the students, their mentors, and the professor found the class beneficial. The results of this paper are expected to help CM programs with the establishment and improvement of internship classes in their curriculum.

**Keywords:** interview-based internship class assignment; internship; construction education; class assessment; job market preparation

## 1. Introduction

In this generation, with a rapidly changing market, there is an overwhelming demand for skilled workers. The construction industry is no exception in this trend. In this industry, as one of the biggest and most important sectors in every country, skilled workers play an important role in the success of the projects. Skills can be learned from a variety of sources—one such source is a college education. Therefore, quality construction education is vital for students. There have been technological and non-technological improvements in construction education over the past twenty years. For example, virtual learning environments through technologies such as virtual reality (VR) [1,2], augmented reality (AR) [3], and building information modeling (BIM) [4] have an overwhelming potential to improve the quality of education among its participants significantly. Advanced technologies such as these are shown to increase incentives among students due to their interactive and stimulating nature. However,

there are still issues in construction education that need to be considered. One of the important issues is the lack of enough skills in recent graduate students to satisfy the real and dynamic demands of the industry. One example is that college students may not gain enough interpersonal skills, such as communication and leadership, to be successful in their future careers [5]. These topics become more vital when considering the issue of low skilled workers in the construction industry. Therefore, there is a need to improve the quality of skills that construction students gain through education to prepare them for the job market after graduation. These skills vary from technical to non-technical, depending on the job requirement. But, often, a combination of both technical and non-technical skills is desirable for employers. Internships can fill this gap by providing a wide range of hands-on experiences for the students. In some universities and for some majors, such as CM and construction engineering (CE) at UNL, students can take a class in tandem with their internships. This helps the students to get more out of their internship experiences by fulfilling additional credits towards their graduation requirements. The assignments required by the class help students to learn more throughout their internship. Whether the internship is unpaid or paid, it provides an excellent opportunity for the intern to acquire practical knowledge by interacting with industry experts and real-world projects. Students can also leverage their academic knowledge on these projects. In addition, internships provide a training ground for the students to transition from a student to a full-time employee [6]. Not only does internship experience develop students' technical skills, but it also gives them a chance to understand the basic building blocks of leadership and management by getting in touch with leaders and managers with different characteristics.

Students may communicate well with their friends at school, but in an internship environment, they may experience working with people who are older or younger than them. In this situation, communication skills play a significant role in job success. Internships, however, are not only about learning how to communicate with different employees and clients. Throughout the internship, interns will learn a variety of other technical, leadership, managerial, organizational, ethical, and professional skills, which, in turn, makes them more competitive in the job market [7–12]. Specifically, studies have found that internships have a positive correlation with future job satisfaction [13,14], the ability to secure a job quickly and with ease [13,15], a higher salary [13,16], and the attractiveness of candidates to recruiters [13,17]. Students can also establish connections with other employees in the company to develop their career network during an internship. Often, at the end of the internship, the employers will offer an extension of the internship or a full-time job offer in order to benefit from the money and time they invested in their intern.

In addition, students participating in internships can learn more about their interests by exploring and experiencing various job positions and different duties in a relaxed, carefree, and contract-free environment. The carefree environment makes them stay with their current career path or change it depending on whether they like the type of work or not. Finally, students can benefit from their internship by putting the experience on their resume. This will give them a significant advantage when looking for a job over other candidates without a practical work background.

There have been numerous studies on the benefits of internship experience [7,18–20]. However, the benefits of a potential internship class for students in CM programs at universities have not yet been investigated. Identifying the potential benefits can increase the efficiency of educational CM programs by fulfilling the skillset gaps between the industry requirements and educational programs at universities. Pan et al. (2018) argued that the quality of an internship has a positive correlation to the employment success of the student [21]. Therefore, it is necessary to improve the experience that the students can get out of their internship. The aim of this study is, first, to demonstrate the structure of the internship class and then to investigate its effectiveness. We have focused on the CM and CE program at UNL as a case study. The lessons learned from this case study are expected to be transferable to other CM programs. In this study, we comprehensively evaluated the efficiency of the internship class from the viewpoint of the students, class professor, and students' industry mentors. We used three online questionnaires to assess the internship class. These three questionnaires were

specifically designed for the students, the professor who taught the class, and the internship mentors. We evaluated the internship class, regarding its assignments and modules, class workload, and the difficulties that students had in their internship period.

## 2. Background

While the quality of the internship experience is important, the academic standing profile of a student by itself plays a significant role in a successful internship. Hergert (2009) analyzed the internships of 114 undergraduate and graduate students, and found that students with higher grade point average (GPA), received greater value from internships [22]. The opposite is also true. Studies show that internship experiences help students to improve their academic performance. Gomez et al. (2004) studied bioscience students' work placements and concluded that internship experiences enhance students' final grades [23]. Knouse et al. (1999) performed a similar study on 1117 alumni who graduated from the business administration program and found that students with internships had a superior college performance [15]. Similarly, Hauck et al. (2000) showed that CM students who took a structured internship program received a slight increase in their GPA [24]. Eyler (2009) suggested that experiential education, such as internships, improves students' academic learning by (a) providing deeper learning of subjects in comparison to the limitation of only studying matters in the classroom, (b) improving students' critical thinking skills to be used in complex situations, and (c) engaging the students through a continuous learning environment such as the workplace [25]. Routon and Walker (2015) investigated the Higher Education Research Institute (HERI) survey for 103,542 students from 463 institutions and found that internships can be beneficial for both universities and the students. For students, internships can increase their grades, motivate them to get full-time positions in their field of study or attend graduate school after graduation, and slightly boost their ambitions to do administrative tasks. For universities, internships can increase students' satisfaction rates, graduate school enrollment rates, and coursework retention [26]. Faculty internships can also provide a win/win outcome for the professors during the summer. As Hynds (2000) showed in his research, an internship program opens the opportunities for faculty members to get in touch with real and new construction methods, conduct field research, stay up to date with their area of expertise in order to help come up with new ideas for research, develop the relation between industry and university, and to implement the newly learned construction methods in classroom teaching [27].

Some studies focused on the issues that interns might face during their internships. Although internships are beneficial for the students in terms of learning skills, because of socialization and acculturation issues, some students might gain less value from their internship experience. Therefore, it is recommended to provide an orientation period for the intern, similar to what is provided for new employees [28]. New information, new people, a new environment, as well as new tasks, can also be stressful for the interns [29]. Woo et al. (2017) investigated the communication-based tensions among satisfied and dissatisfied interns. They found that the three leading causes of tensions among interns are: (a) inexperienced interns versus experienced employees—a built-up tension when interns are given simple and repetitive tasks, along with not being entrusted with the same challenging tasks as full-time employees; (b) now versus future—a tension in which interns enjoy their current internship experience but cannot see themselves working on the internship position as a full-time employee in the future; and (c) close versus distant supervision—a tension that might arise because of too much observation, or too much guidance that leaves no room for independence [30]. Rothman (2007) found that students will have a more relaxed and successful internship if the employers provide mentors for the interns, provide feedback, give clear assignments, expose them to larger organizations, and advise them on what needs to be achieved [31]. Williams et al. (2019) found that for interns in criminal justice, their ability to communicate well, their overall appearance, and their punctuality were all significantly related to their internship performances [32]. Zehr and Korte (2020) suggested that it would be beneficial for both interns and their mentors to undertake training before the start of an

internship. Based on their study, training is specifically important for the mentors as they might not be sure about how much of a workload their interns can handle [33].

The majority of the studies on internships are about their benefits. According to Coco (2000), internship programs are valuable for both students and employers because it can "reinforce technical competencies, improve analytical skills, and, most importantly, foster an awareness of the constant need for adaptability and creativity in a changing world" [34]. Adebakin (2015) studied 120 Nigerian students and found that students with internship experience had better academic performance and employment opportunities after graduation [35]. In another study by Gault et al. (2000), it was shown that business alumni with internship experience had higher starting salaries over alumni without internships during their undergraduate period [14]. This is true considering the fact that employers have a great willingness to hire interns over non-interns [36]. In short, interns can benefit from internships in two ways, (a) pragmatic benefits, which are the technical skills, knowledge, and abilities that interns learn during the internship which prepare them to enter a professional job, and (b) personal benefits, which are the benefits that directly impact the personality of the intern such as self-image and positive attitude [37].

Although the internship class is not required for most of the CM programs in the United States, in some majors, such as criminal justice and marketing, internship classes are a required part of the curriculum [38,39]. There are different stakeholders involved in an internship class. Each of these stakeholders may benefit or face challenges from the class. They may also have different perceptions of an internship program and have different ideas about its goals [7,40,41]. From the students' standpoint, an internship class will provide a structured framework for them to learn and gain more knowledge while interning. For the students, the challenging part might be securing an internship position for the class [7]. From the employers' standpoint, an internship is a win/win condition because once the intern completes the internship with the company, the employer can potentially hire a trained employee after the intern completes their education at university. Whether the internship class assignments are based on interviews or writing reports, the fact that their interns are gaining more knowledge is beneficial. Specifically, an internship class with an interview assignment provides a structure for the mentors to teach the interns. Interview assignments provide a framework for their interns to learn the concepts that, otherwise, they could miss in teaching their interns. However, the challenge for the employers might be finding the appropriate mentor for their interns, especially for interview assignments. The details of the internship assignment in this study are provided in Section 3.

For the universities, an internship class helps boost the reputation of the university. Better and well-prepared students that graduate from a specific university will build up a good reputation for that university. The challenge, however, might be inadequate support from the university to the interns, inadequate assessment methods for the internship class, and/or finding an appropriate teaching method and instructor [7].

Divine et al. (2007) studied the advantages of a required internship class in the marketing program and argued that, although a required internship class for marketing students is beneficial, the marketing department may face some challenges for implementing the internship program into the curriculum. These challenges include hiring an effective internship director, finding sufficient internship opportunities, maintaining enrollment, and/or providing adequate institutional oversight [38].

There are different approaches to internship course assignments. Since the students who take an internship class might go to diverse organizations with diverse duties, the assignments can be challenging for some students. At the University of Idaho, the students that want to gain academic credits for their internship are required to complete one assignment per credit. Students have the option of choosing the assignments from seven options. These options are (1) a work product such as a report, project, or portfolio of their work, (2) internship and coursework connections, in which the students write a paper that describes the connection between their internship and three concepts of their major or three classes that they have taken, (3) a presentation to students about the internship, (4) the internship context, in which the students write a paper about the context of their internships such as

the history, size, customer, products, services, and competitors of the organization, the department that they worked and their duties, and how their understanding of the internship environment changed over time, (5) lessons learned and an updated resume, (6) a daily journal, which requires students to write a daily entry about what they did on the internship, (7) developing personal and interpersonal competencies, in which the students are required to choose an interpersonal competency from a textbook, such as stress management. Students then need to create a plan to apply the outlined principle of the competency in the textbook during their internship. Finally, the students are required to document what they learned from their experience and outline what they need for the future development of their competency [42]. In some universities, the main assignments of the internship class are either a log of daily work activities or a report on what the students have learned during their internship experiences [43]. The internship course assignment could also be a written assignment that requires the students to analyze a problem that they faced during their internship and how they dealt with it [44]. The internship class assignment for CM majors at UNL is explained in detail in Section 3. In short, the main assignment of the internship class at UNL was the interview assignment.

In construction programs across the nation, an internship class is not a required part of the curriculum, and there is no structure or method suggested by the Accreditation Board for Engineering and Technology (ABET) or the American Council for Construction Education (ACCE) regarding what a construction internship class should be like in order to provide the most benefits for the student [45]. The aim of this study is, first, to demonstrate the structure of the CM internship class at UNL and then to investigate its effectiveness.

## 3. Elective Internship Class at UNL

This study evaluates a three-credit summer internship class that students took during the summer of 2017 at UNL. Students in CM and CE majors can take this elective class. These two majors at UNL are ACCE and ABET-accredited. The class was completely online and without any exams or finals. Each week, students were required to interview their mentors about one module and report their interview results. There were 10 modules for 10 weeks. The modules were (in order of the weeks):

- Module 1: Finding Your Place
- Module 2: Time Management and Scheduling Work
- Module 3: Business Development and Marketing Strategies
- Module 4: Finance and Budgets
- Module 5: Use of New Technologies in Construction
- Module 6: Contracts
- Module 7: Risk Analysis and Management
- Module 8: Personnel Management
- Module 9: Communication
- Module 10: Leadership

Each week, students were assigned reading materials for each module. The content of each module was usually two to three articles. After reading the materials, students were supposed to come up with some questions about the material related to the module. They were supposed to interview their mentor or an individual in the company who was associated with the content of the module. For example, for module 3, which is Business Development and Marketing Strategies, if their mentor did not have enough expertise in the marketing area, students could interview a person in the marketing and business development department. The purpose of the modules was to boost the students' skillset through studying important skills and topics such as Communication, Leadership, Time Management, Risk Analysis, etc. By interviewing different employees in the company, various concepts and skills could be retained more efficiently by the students simply from listening to employees who had daily, practical experience with the related issues. For the ten designed modules, the students were required to carry out ten interviews over ten consecutive weeks. At the end of each week, students were

supposed to share their interviews with other students. It is shown that when students share what they have learned and the key takeaways from their internship experience with other interns, it creates an environment where all the students learn from each other's point of view [46]. Therefore, the instructor of the class made a private Google + Community, which the students were members of, and they could create a blog post to share their interviews with other students (Figure 1). All the students were able to see each other's weekly blog posts and learn from different students' interview questions and responses. In addition, students were supposed to comment on each other's blog posts and reply to the comments. Figure 1 shows an example of a blog post.

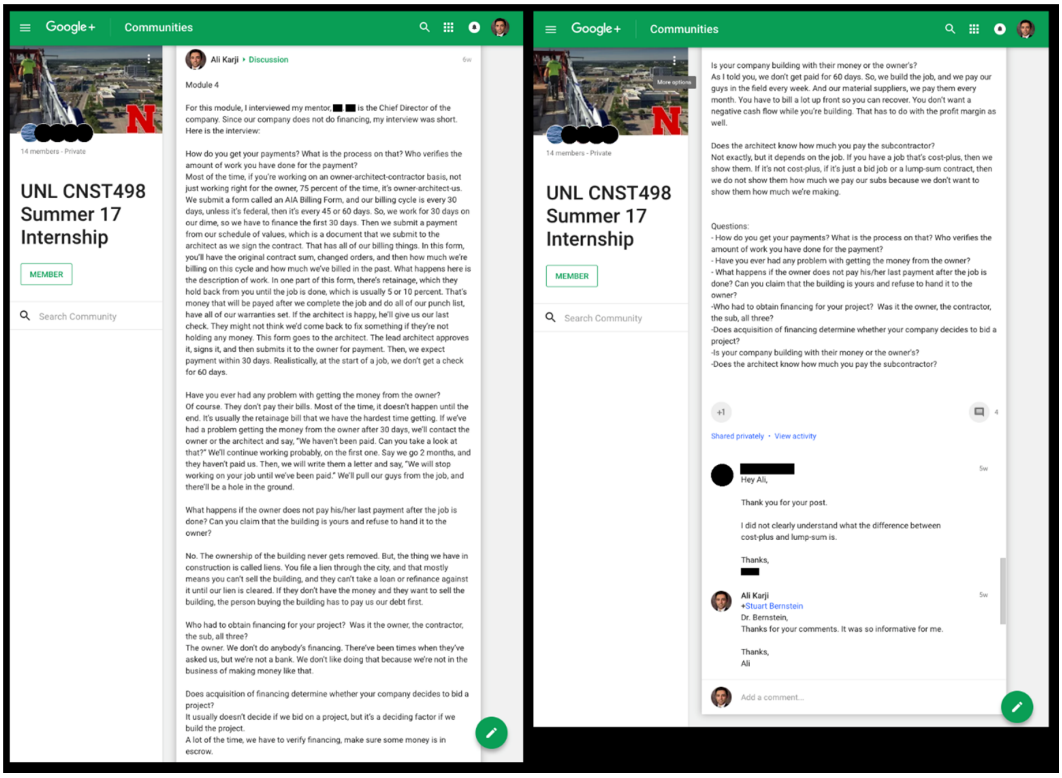


**Figure 1.** An example of a blog post for module 4 and the student interaction through comments.

Some of the main goals of the class included learning about the different facets of the construction industry, learning more about the different people and departments in the company, having people get to know the interns, and increasing communication skills. At the end of the class, students presented what they learned during their internship one day prior to the fall career fair at the UNL. Therefore, blog entries and presentations were the assignments of this online class.

## 4. Methodology

In the previous section, the structure of the internship class for the CM student at UNL was presented. This section presents the methodology for evaluating this internship. The internship is evaluated from three viewpoints: students who took the class, the professor who taught the class, and students' internship mentors. We evaluated the internship class, its assignments and modules, class workload, and the difficulties that students had in their internship period. In order to gain a better understanding of how the internship class can be improved, we developed three questionnaires at the end of the class: one for the interns, one for the instructor, and one for the students' mentors.

The online questionnaires were designed in Google Docs. The purposes of the questionnaires were explained to the participants. In the introduction of each online questionnaire, we obtained respondents' consent by mentioning that, by filling out the survey, they agreed that their survey data would be used for a publication. Furthermore, at the beginning of each survey, we assured the

respondents that their answers would remain anonymous and that their names would not be revealed in any part of the study.

Besides the demographic, open-ended, and multiple questions, other questions were created on a five-point Likert scale. Likert scale questionnaires are mostly used for attitude research projects [47]. To ensure that the questionnaires bring reliable results, the surveys were evaluated by subject matter experts using the content validity method. In this method, experts assess the content of the questionnaire survey to find how well the questions measure the goal of the study [48]. The main objective of the three questionnaires was to answer the following questions:

1. Was the internship class beneficial based on students' and their mentors' opinions?
2. Did the students and their mentors like the structure of the class and, specifically, the interview assignment?
3. What was the most challenging part of the internship class assignment?
4. How did the students feel about the internship class assignment workload?
5. How did the students rate the module assignments of the class?
6. What was the most challenging part of the internship for the students?

## 5. Results

We emailed the survey to all of the students in the class and their mentors. Out of 11 students and 11 mentors, 10 students (91% response rate) and eight mentors (72% response rate) completed the survey. All of the respondents were male students. The first part of the questionnaire were demographic questions. Table 1 shows the demographic information of the students.

**Table 1.** Demographic information of the students.

| | | Percent |
|---|---|---|
| **Class year** | Graduate | 30 |
| | Senior | 70 |
| **Major** | Construction Management | 80 |
| | Construction Engineering | 20 |
| **Age** | 20–22 | 50 |
| | 22–24 | 10 |
| | 24–26 | 10 |
| | 26–28 | 20 |
| | Older than 28 | 10 |

The instructor of the class had more than 25 years of experience in the construction industry and 15 years of teaching experience as a professor at UNL. Table 2 shows the demographic information of the mentors.

After the demographic questions, students were asked to express their ideas about the class, assignments, instructor, mentors, and internship experience. Most of the questions were based on the five Likert scale points. On this scale, one is the lowest score, and five is the highest score. Table 3 shows the responses.

**Table 2.** Demographic information of the mentors.

| | | Percent |
|---|---|---|
| **Company Type** | Construction | 62.5 |
| | Engineering | 28 |
| | specialty construction | 12.5 |
| | Architecture | 0 |
| **Years of experience** | 0–5 | 0 |
| | 5–10 | 50 |
| | 10–15 | 12.5 |
| | 15–20 | 25 |
| | More than 20 | 12.5 |

**Table 3.** Students' responses.

| Category | Questions | Answers | Ques. |
|---|---|---|---|
| **Overall Class Evaluation** | I found the class beneficial. | Mean score of 3.8 | 1 |
| | What were the most challenging parts of the class assignments? (Check all that apply). | Writing blog posts … … … … … … … … 10%<br>Finding an appropriate person for interview … … … … … … … … … … … … 37.5%<br>Doing the interview … … … … … … … … 25%<br>Due date of the assignment … … … … 25%<br>Reading the materials of each module … … … … … … … … … … … … … … 25%<br>Interview each week … … … … … … … … 25%<br>Reading and commenting on other students' posts … … … … … … … … … … … … … … … … 25% | 2 |
| **Assignment Evaluation** | The class workload was heavy. | Mean score of 2.625 | 3 |
| | On average, how many hours per week did you spend on the assignments? | (4–6) h … … … … … … … … … … 12.5%<br>(0–2) h … … … … … … … … … … … 25%<br>(2–4) h … … … … … … … … … … 62.5% | 4 |
| | Interviews are the right assignments for this class. | Mean score of 4 | 5 |
| | Instead of interviewing, I would rather write a weekly report about observations at work related to the week's reading material. | Mean score of 2 | 6 |
| **Module Evaluation** | Finding Your Place | Mean score of 4 | 7 |
| | Time Management and Scheduling Work | Mean score of 4.375 | 8 |
| | Business Development and Marketing Strategies | Mean score of 4. 25 | 9 |
| | Finance and Budgets | Mean score of 4.625 | 10 |
| | Use of New Technologies in Construction | Mean score of 4.25 | 11 |
| | Contracts | Mean score of 4.625 | 12 |
| | Risk Analysis and Management | Mean score of 3.875 | 13 |
| | Personal Management | Mean score of 4.25 | 14 |
| | Communication | Mean score of 4 | 15 |
| | Leadership | Mean score of 4.625 | 16 |

**Table 3.** *Cont.*

| Category | Questions | Answers | Ques. |
|---|---|---|---|
| **Mentor Evaluation** | I had difficulties finding the right person to do the interview. | Mean score of 2.5 | 17 |
| | I had difficulties understanding interviewees' answers. | Mean score of 1.375 | 18 |
| | I felt the interviewees were not willing to do the interviews | Mean score of 1.125 | 19 |
| | My mentor spent enough time training me. | Mean score of 3.5 | 20 |
| | My mentor provided me with enough tasks. | Mean score of 3.625 | 21 |
| | My mentor referred me to the appropriate person to interview each week. | Mean score of 4.125 | 22 |
| **Internship Evaluation** | What were the challenging parts of your internships? (Check all that apply). | Communication with other employees … … … … … … … … … … 25%<br>Language barrier for international students … … … … … … … … … … … … … 25%<br>Working the specific hours … … … 25%<br>Working in areas that are far from the place I live … … … … … … … … … … … … … … … … … 25%<br>Not having enough work to do … 25%<br>Not being satisfied with the office or not having an office … … … … … … … … … … … … … … … … 25%<br>Doing the tasks ordered. … … … … 12.5%<br>Working in the job site … … … … … 12.5%<br>Safety issue on the job site … … … 12.5%<br>Not being satisfied with the internship payment … … … … … … … … … … … … 12.5%<br>Transportation problem … … … … 12.5%<br>Learning new information … … … 12.5% | 23 |

Likewise, we sent a similar questionnaire to the mentors. Table 4 shows the mentors' responses.

**Table 4.** Mentors' responses to the questionnaire.

| Question | Answer | Question |
|---|---|---|
| I found the interview assignment beneficial for my intern. | Mean score of 4.25 | 1 |
| Interviewing is the best method of assignment for my intern. | Mean score of 3.75 | 2 |
| I had difficulties sparing my time to do the interview. | Mean score of 2.375 | 3 |
| I found the internship class beneficial for my intern. | Mean score of 4.25 | 4 |

Finally, a questionnaire survey was sent to the instructor. Table 5 shows the results.

**Table 5.** Instructor's responses to the questionnaire.

| Questions | Answer | Question |
|---|---|---|
| Overall, how satisfied are you with the students' performance? | 4 | 1 |
| How well do you think students read the module materials? | 2 | 2 |
| How well do you think students perform the interviews? | 3 | 3 |
| How many hours on average do you think students spend on each module? | 0–2 h | 4 |
| How heavy was the class workload? | 2 | 5 |

## 6. Discussion

### 6.1. Students' Responses

Data from Table 1 indicates that students in this class were mostly senior CM students. Based on question 1 in Table 3, overall, students found this class beneficial. They also believed that finding the right person for the interview was the most challenging part of the class assignment (question 2, Table 3). Other challenges include conducting the interview, the due date of the assignment, reading the materials of each module, interviewing each week, reading and commenting on the students' posts, and writing blog posts. The last two challenges listed support the study by Wright (2013) that students are willing to spend less time on individual sharing and providing feedback for others [49].

Students believe that the internship class did not have a heavy class workload, nor a light class workload (question 3, Table 3). The mean score of class workload (question 2 of Table 3) is three, which means that the class workload was neither heavy nor light. However, the instructor believed that the class workload was relatively low, giving a score of two (question 5 in Table 5). This slight difference is more apparent if we compare the students' answers on how much time they spent on the class each week and the instructor's response to how much time the instructor thought students spent each week on the assignment. Most of the students, 62.5%, spent 2–4 h on assignments, while the instructor predicted it would be about 2 h each week (question 4, Table 3, and Table 5).

The internship assignments of a class differ based on universities and locations. The primary assignment could be portfolios of work, activity logs, an overall or weekly report, oral presentation, final papers, or daily journals [42–44,50]. There are also some existing internship programs that have interview assignments for the students taking their internship classes. However, most of these classes do not require constant interviewing on a weekly basis, nor do these classes base their core curriculum on the interview assignments. These interview assignments are known as informational interviews where the students gain more knowledge about their employer, future career goals, and how to be successful based on the advice from their employers' point of view [49,51–53]. To the best of our knowledge, our study is the first academic approach to present and evaluate an interview-based internship class assignment.

Overall, the students believed that interviews were the right assignments for the class, and they did not agree with writing weekly reports about their observations at work (questions 5 and 6 in Table 3). This is also aligned with the mentor's opinion about the best type of assignment for the class (question 2, Table 4). This supports the previous literature suggesting that weekly reflective journals were neither the desired assessment option of an internship program for students nor for industry mentors [50].

Questions 7–16 in Table 3 show that students did find all the modules beneficial. Leadership, Contracts, and Finance and Budgets were among the most helpful modules in this class. Leadership skills for interns have been identified by numerous sources as one of the most important factors that are linked to a student's positive academic and industry outcomes [54–57]. To justify the students' perception of the importance of Contracts and Finance and Budgets, one reason for this could be the fact that Contracts and Finance and Budgets deal with money, and it is an essential element of each project. Among other modules, only Risk Analysis and Management received a mean score below four. This could be due to the fact that many students were not familiar with risk concepts as there were not any specific risk analysis classes in the CM or CE curriculum at UNL.

According to question 17 in Table 3, the score of 2.8 shows that it was relatively difficult for the student to find the right person for the interview. This can also be confirmed from question 2 in Table 3, where students confirmed that finding the right person was the most challenging part of the class assignment. This issue could have been improved if the companies chose the right person to mentor the students. Although students had difficulties finding the right person to do the interviews, when mentors spared time for the interviews, they did rather well. They provided clear answers to the interview questions, they were eager to do the interviews, they spent enough (relatively) training the

interns and gave them enough tasks, and if they did not have the knowledge to answer the interview questions, they referred the interns to the appropriate person for the interviews (question 18–22, Table 3).

As mentioned in the background, there might be some challenges for the interns in their new position. Diambra et al. (2004) mentioned in their study that getting involved with new information, new people, new environments, new tasks, and prolonged working periods can be stressful for the interns [29]. Based on Akomaning et al. (2011), the top four challenges that the students face during an internship are (a) unfriendly staff that are not willing to help or teach students, (b) a lack of transportation and accommodation, (c) no proper training and (d) being restricted to one department/section and one activity [58]. In our study, according to question 23 in Table 3, communication with other employees, the language barrier for international students, working specific hours, working in areas that are far from the place the interns live, not having a sufficient amount of work to do, and not being satisfied with the office or not having an office were the challenges most mentioned by the students. Other challenges mentioned by the students include working at the jobsite, safety issues on the jobsite, not being satisfied with the internship payment, transportation problems, and learning new information.

At the end of the survey, some students provided comments for the research team. Most of the comments were related to how useful the interview assignments were because it allowed the students to meet new people from different parts of the company. This aligns with Rothman's study (2007), stating that when interns are exposed to a larger community of staff, they will have a more gainful internship experience [31]. Other comments were about the fact that students felt that the internship class prepared them with more skills for their future full-time positions. One student mentioned that "While there were times that I found it difficult to find an appropriate person to interview, I think that being able to talk with them about various topics helped me see different lessons that I would not have been able to see if I just read a pdf on the subject matter. It made me feel more comfortable going into a career once I graduate from college". Another student mentioned, "I really enjoyed reading the modules because they gave me different topics to learn during my internship. The interview assignment also made me meet some cool people inside the company that I became good friends with them". The literature agrees that networking is an important benefit that interns should seek during their internship. Interviewing professionals at work can ease students into the networking process [59].

### 6.2. Mentors' Responses

Table 2 shows that mentors were working mostly at contractor companies, and they all had more than five years of experience. Based on questions 1 and 2 in Table 4, mentors generally agreed that the interview assignments were beneficial and also the best type of assignment for their interns. The previous literature suggests that interviewing builds a rapport between interns and their mentors [49,52]. At the end of the online questionnaire survey, some mentors provided comments for the research team. One mentor emphasized on the benefits of the interview assignment by saying that "I think the various topics from week to week forced my intern to meet and interact with people throughout our company who he would not normally have had contact with. Meeting and speaking with these people was informative and helpful. Public speaking and off the cuff conversation is not my intern's strength and so I think while difficult at times, it was especially beneficial for him". As mentioned in the previous section, this aligns with Rothman's study (2007), stating that when interns are exposed to a larger community of staff, they will have a more gainful internship experience [31]. Another mentor also emphasized on the importance of the interview assignment and added some suggestions for the interview process by saying that "I think it is great that they get to meet and learn from different people in the company. The interview sessions also provide a forum to go deeper into the topics that they are interviewing on. It may be beneficial to start the sessions with their thoughts on the subject and base knowledge and then follow up after the interview to see if their views/knowledge on the subject has changed". One comment specifically mentioned the usefulness of Communication and Leadership modules by saying that "Overall, I think that having an internship class is a good thing. I noticed my

intern trying to apply information from the modules to everyday mishaps on job site. I did also notice that there were topics that he seemed to take a liking too. My intern was international and so there was room for improvement on his communication skills with some of the employees. So, I found it useful for him to interview about how to improve his communication skills with other employees and other trades at the jobsite. The one topic I thought is a useful one to talk about but was hard for me to teach as a mentor was leadership. But, I think my intern took to it well". It is worth mentioning that this comment supports what Williams et al. (2019) mentions about the importance of communication skills for an intern as an indicator of a successful internship experience [32]. Another suggestion from another mentor was about the broad topic of the interview questions. The mentor said that "Some of the weekly assignments for the interns was very broad and could be answered in a variety of ways. Understanding that it is often difficult to give questions to a group of interns across a diverse industry, it would help to be more specific about topics such as risk or communication". Finally, one mentor pointed out a drawback of the class assignment by saying that "The concern of the intern to get the interviews and other assignments done often got in the way of the intern actually performing the work he was hired on to do!". However, as mentioned before, based on the results of question 1 in Table 4, mentors generally agreed that assignments were beneficial for their interns. This was specifically true for the two mentors with 15–20 years of experience.

Finally, the mentors felt that they were not too busy to do the interviews. Considering that finding an appropriate person for the interview was the most challenging part of the class (question 2 in Table 3), it is evident that the mentors were not able to answer all the questions related to the modules.

### 6.3. Instructor's Responses

Overall, the instructor of the class was satisfied with the students' performance (question 1 in Table 5). However, he thought that students did not read the modules thoroughly (question 2 in Table 5). The score of three for question 3 in Table 5 shows that the instructor believed that the students neither performed well or poorly in the interviews. The instructor thought that students spent 2–4 h on average for each module (question 4, Table 5). Contrary to what he thought, most of the students believed that they spent 2–4 h on each module each week (question 4, Table 3). Moreover, the score of class workload is slightly different based on what the instructor thought (a score of two based on question 5, Table 5) and what the students believed (a mean score of three based on question 3, Table 3). Later, the instructor sent us a note on this matter. "As for the number of hours each student spent, I would guess two to three on average. There were about two hours' worth of reading each week. It should only have taken about an hour to come up with the questions to ask. It may have taken about $\frac{1}{2}$ h to arrange the interview and another hour to conduct the interview. Finally, it should have taken about an hour–1 $\frac{1}{2}$ h for them to compile the interview and write up the responses. In essence, from my estimate, the minimum should have been 4–5 h. To do an exceptional job, 10 would have been more than enough. If you use the rule of thumb that a semester includes 45 h of class time, plus 3 h of homework for every hour of class time ($3 \times 45 = 135$ h), at the end of the semester, they should have spent about 180 h on this class. If you consider the survey and the final presentation might both take 5 h, that leaves 175 h, which if you divide by 10 weeks, you have 17.5 h each week the students should be spending".

### 6.4. Findings

Overall, based on Section 6.1, Section 6.2, and Section 6.3, the following results can be presented in order to answer the research questions:

- Students, mentors and the instructor all found the class and interview assignment beneficial;
- Students preferred the interview assignment over the report assignment;
- The most challenging part of the assignment was finding the right person to interview;
- The class workload and the interview assignment were considered average by the students;

- Students found all ten modules beneficial;
- Communication with other employees, the language barrier for international students, working specific hours, working in areas that are far from the place the interns live, not having a sufficient amount of work to do, and not being satisfied with the office or not having an office were the most mentioned challenges for the interns.

### 6.5. Limitations of the Study

There are some limitations that hinder the results of this study. These limitations are as follows:

- One of the limitations of this study is the number of respondents. Our questionnaire was filled in by ten students, which is not considered a significant sample of data. The same applies regarding the mentors. To solve this problem, we could have generalized the questions so that students, employers, and instructors from other universities could participate;
- There might be different interviewees for different modules, since the main mentor might not be able to provide responses for all the modules. We sent the questionnaire survey to the main mentor of the intern and not to all of the experts that were interviewed by the students. Since the interviewees' opinions might be different from each other, our analysis might not reflect the ideas of all of them;
- In this survey, there were no female students among the questionnaire respondents. The construction industry is suffering from a low female employment rate. Studies show that women's employment has consistently been less than 10% of the total workforce [60,61]. Inadequate preparation of the female students for the predominantly male industry in construction education is an important issue. It would have been interesting to hear the feedback of a female student on her challenges for the internship experience

## 7. Conclusions

In every industry, having practical skills is one of the keys to success. The construction industry is not alone in this matter. One way of getting hands-on experience is through internships. In this paper, we first presented the structure of the CM internship class at UNL. We then examined its effectiveness from the students' perspective, the instructor's perspective, and the mentors' perspective. We found that, in general, students, the instructor, and mentors found the class beneficial. The main benefit of the internship class for the students was the opportunity to meet new employees for the interview assignments. Each week, students were required to interview their mentors about one module and report their interview results. If their mentors did not have enough knowledge of the module, students were supposed to interview an individual inside the company who related to the content of the module. This benefit could also be realized from the comments that students provided at the end of the questionnaire. Most of the comments were related to how useful the interview assignments were because they allowed the student to meet new employees from different parts of the company. Students believed that the class workload was average. However, the instructor thought that the class workload was relatively light.

Regardless of the class workload, the interview assignments were one of the key advantages of this class. These interview assignments were about the content of the ten modules that were mentioned in Section 3. Overall, students found all of the modules beneficial, and this was reflected in their satisfaction with the class. The purpose of the modules was to boost students' skillsets through studying important skills and topics such as Communication, Leadership, Time Management, Risk Analysis, etc. By interviewing different employees in the company, various concepts and skills could be retained more efficiently by the students, simply from listening to employees who had daily, practical experience with the related issues. This was also confirmed by mentors who found the class and interview assignment beneficial. Mentors generally did not have any problems with the interview. However, some of them had difficulty sparing time for the interview. This was probably why students

believed that finding an appropriate person for the interview was the most challenging part of the class. Based on the result of this paper, it is safe to believe that the CM internship class at UNL and its interview assignment were beneficial.

With the results of this survey in hand, our next study would focus on exploring the pros and cons of making the internship class as a mandatory requirement for the student in the CM or CE programs. This study is underway, and the results will be presented elsewhere.

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