The purpose of this paper is to highlight the logistics and process that went into creating the study guide for the new Student Learning Outcome, Understanding Culture Within the Construction Industry through Lifelong Learning. The study guide for SLO 24 was developed through an extensive literature review and survey sent out to students in the program. In this study guide, it covers the concept of culture, the different types of culture in a corporate environment, and how these cultures effect the construction industry. The goal of the study guide is to assist students in understanding the learning criteria that coincides with SLO 24.

Key Words: Cross-cultural Training, Organizational Culture, Safety Climate, Cultural Awareness.

Introduction

Cal Poly’s construction management (CM) department is best known for creating a curriculum that well equips students for the professional world beginning day one of instruction. The department has created a list of Student Learning Objectives (SLO’s) that they deem necessary for understanding in order to graduate. As the construction industry continues to change, the curriculum is also changing. With that, the department has acknowledged the need for additional material to be implemented in the classroom.

The following paper highlights the new SLO for understanding culture. Culture is an intangible topic that is hard to grasp but important to understand in order to succeed in the professional world. As noted in the study guide, there are several different types of organizational cultures that need to be addressed. These include clan culture, adhocracy culture, market culture, and hierarchy culture. Also pointed out in the study guide is the need for understanding culture within partnerships. Finally, the study guide provides information on how all construction uses best practices that emphasize safety culture within a company and on a jobsite. When entering the professional world, it is important to understand these types of organizational cultures to collaborate efficiently with employees, peers, employers, and partnerships.
Process

When the CM department finalized the research that needed to be done and who was going to do it, they had each individual create a defined plan for completing the work. In this plan, the students individually created a timeline with key milestones for the project duration. For SLO 24, two students collaborated to create a literature review on the topic. The students also worked together in creating a list of survey questions that were sent out to the department. These questions were created in order to identify how beneficial the new SLO 24, understanding culture, would be for the students in the department. The following deliverables were required for completing the process.

1. Study Guide – The study guide was the main deliverable of the project for Student Learning Outcome. The purpose of the study guide is to provide information on Understanding Culture Within the Construction Industry through Lifelong Learning (SLO 24).

2. Study Guide Questions / Answers – Once the study guide was completed and the topic was reviewed, questions were developed for the SLO based on the developed study guide. Eleven short answer and eleven multiple choice questions were created based off the information in the study guide.

3. One Page Summary – Finally, a one-page summary was developed in order for the department to have a strong understanding of what is being discussed in the curriculum.

4. Survey Data – A survey was sent out to the students in the department to identify the need of adding Understanding Culture into the current curriculum.

Once all deliverables were defined, it was up to the students to complete them in a timely manner. The students had until the approximately four months to do a literature review on the SLO 24, send out the survey, create a study guide, and create study guide questions.

Deliverables: Study Guide

As previously mentioned, the study guide was the main deliverable of the project. For the SLO 24, Understanding Culture, it required extensive research to understand what defines culture. In order to create a concise paper, the students chose to focus their research on cultures in a professional setting. The paper acknowledges that these culture types are the most common cultures seen in a career and are important to be understood for success.

There were a few clear steps taken in order for the student to complete the study guide. First, the student conducted a literature review on the research topic. Some of the information from these resources were used in order to create their own definitions on the highlighted topics. The following topics were covered in the study guide:

- Culture Defined – The opening subject of the study guide defines culture in a broad sense. It emphasizes that cultures vary depending on who, what, where, and why the group has been created. Culture defines the perspectives, beliefs, actions, rules, and practices that are commonly shared by one group. For the construction industry, culture extends to the
characteristics of the industry and how these values are carried throughout the building process.

• Types of Construction Cultures

  o Organizational Culture - Organizational culture can be defined as how the employees of the company view the values, beliefs, and expectations that guide the practices of the company. There are four different types of organizational cultures that a company may adopt. These include:

    ▪ Clan Culture - Clan culture is a family-like corporation that emphasizes common beliefs and goals at all levels of the company;
    ▪ Adhocracy culture - Adhocracy culture can be defined as a corporation that is equipped to adapt to change quickly. These types of corporations pride themselves on their ability to obtain resources through external support;
    ▪ Market Culture - Market culture puts an emphasis on competition between market competitors and competition between members of the organization. Members of the organization are usually led by one main leader and are financially rewarded if they achieve the intended goals of the company;
    ▪ Hierarchy Culture - This culture values structure, stability, and controls. These identities are achieved through internal measurement and documentation of project success.

  o Partnership Cultures – This section highlights the potential risks that may come as organizational cultures merge through partnerships. The information also provides ways to mitigate these risks when partnership cultures clash.

• Safety as a Subculture – This section identifies the difference between safety cultures and safety climate. Safety culture defines the unspoken attitudes, behaviors, and actions of employees that coexist with the organizations systems, practices, people, and leadership in respect to safety. Safety climate is defined by actual conditions that are created by the company and the people that outwardly enforce the importance of safety. It also identifies key characteristics for an effective safety culture and key factors that contribute to an effective safety climate. Finally, the paper acknowledges how to address safety in order to maintain safe practices within the industry.

After developing the research, the students worked together to recognize which information is most vital for the students to understand in this learning objective. In turn, the respective CM 461 student used this information to develop study guide questions that tested the students on the material.

The format for the research paper was required to abide by the Associated Schools of Construction ASC standards created by the ASC Proceedings Style and Formatting Guide for Publication. The following provides an example as to how this study guide was formatted in order to comply with the ASC standards. For example, the first page of the study guide (Figure 1) includes the abstract and introduction for the study guide.

The purpose of the study guide was for students to understand the importance of culture in an organizational setting. By understanding different organizational culture types, this will allow students to choose a career and company that best suits their needs. All individuals are different and require different needs to succeed. Thus, it is vital to understand the options that are available when entering
the professional world. The student felt that these tools for organizational culture would be effective learning outcomes within the curriculum for the construction management department.

Understanding Culture Within the Construction Industry through Lifelong Learning (SLO 24)

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December 2020
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Understanding cultural differences is a crucial step for the success of a construction firm. Creating a common ground for diversifying the perspectives of individuals in the construction industry will prove to be a part of these firms. This study guide will define the importance of culture in the construction industry, as well as how to implement cultural background in our education for cultural understanding. The result will be an understanding on how culture poses a risk to construction and how these risks can be mitigated.

Key Words: Cross-cultural Training, Organizational Culture, Safety Climate, Cultural Awareness.

Introduction

This research paper serves as a study guide for the AIC exam which covers all the material necessary for successfully understanding SLO 24 - understanding cultures. The Cal Poly construction management program is interested in implementing a new student learning objective that deals with understanding the importance of culture in the construction industry. Some of the objectives covered in this study guide include the umbrella definition of culture and the backing necessary for this success. More specifically, it will go into detail on the organizational and partnership cultures that have been created throughout the history of construction. A common ground that all parties involved in the construction process can agree on is the importance of maintaining a safe environment on and off site. Thus, this study guide will go into depth on the definition of safety culture and how that relates to safety climate. Furthermore, the paper will discuss the methods for implementing these practices through cross-cultural training, foreign language requirements, and organizational culture assessment instruments. Ultimately, this study guide will be used by the construction management students at Cal Poly to study for the AIC exam.

Background

Unlike other industries, construction synthesizes the design efforts, construction practices, and business ethics all for one project. The complexity of the industry comes from the everchanging localities that pose a liability threat to a company and a project. As innovative advancements are made,

Figure 1: First Page of Study Guide, SLO 24 (Schrank, 2020)

Deliverable: Study Guide Questions & Answers

Once the study guide was complete, the respective CM 461 student created a set of tests questions that pulled from the study guide. These questions include eleven multiple choice and eleven short answer.
The purpose of these questions is so future classes can use for students to understand the highlighted curriculum in the SLO 24 study guide.

An example of the eleven short answer study guide questions with answers are as follows:

1. Why is it important to develop a culture of sharing knowledge within the construction industry?
   
   In order to help the industry progress, we have to begin publicly documenting the challenges we face on our projects, so that when future constructors face similar issues, they can easily reference how other people within the industry handled them.

2. Who are the “leaders” that have to foster cultural change within the industry?
   
   People who are willing to challenge the status quo and suggest innovative, improved methods of delivering successful projects.

3. What is the difference between collaboration and openly sharing knowledge and expertise?
   
   Collaboration is merely a process, while openly sharing knowledge and expertise requires an industry-wide shift in mentality and culture.

4. How is the focus of the industry misplaced in terms of the well-being of the individuals within it?
   
   We focus too much on job roles and productivity, and this has led to an undervalued and unsupported workforce.

5. Why do we need to tackle illegality within the construction workforce?
   
   The construction industry is one of the most prevalent for labor exploitation and modern slavery.

6. What is the definition of “safety culture”?
   
   A collection of individual and group beliefs, attitudes, and practices concerned with minimizing risks and exposure of workers and the public to unsafe acts and conditions in a construction environment.

7. What is the difference between “safety culture” and “safety climate”?
   
   Safety culture is inherent to an entire organization, whereas safety climate is the perception of that culture by employees on a specific jobsite.

8. Who is responsible for ensuring workers feel comfortable raising safety issues?
   
   Management.

9. How has the advancement of technology widened the gap between field and office staff?
It has become easier for office staff to stay in the office and manage their side of the project without actually going on-site.

10. What is the benefit of having people from diverse cultural backgrounds on a project?

Diverse team members mean diverse management techniques, general building knowledge, and problem-solving approaches. Overall, diverse cultural backgrounds create a more well-rounded project team.

11. What 3 fields or professions does a construction management firm synthesize?

Design, Construction, and Business.

Ultimately, these questions aim to test the student’s ability in conceptualizing the new SLO 24, Understanding Culture Through Lifelong Learning. With the new curriculum, students in the department will be able to identify different organizational cultures in the professional world. They will also be able to understand how these cultures affect the construction industry. Safety is always at the utmost concern whenever working in the field or managing a jobsite. The construction industry has made it a priority to create safety as a primary subculture throughout the entire industry. Thus, the study guide emphasizes safety as a subculture and different best practices for managing safety.

Deliverable: One Page Summary

The One Page Summary is provided to the faculty as an overview of the work completed for the senior project. It is organized similar to a flyer as it shows a small break down of all the pieces that make up the final SLO 24 study guide. The one-page summary is a key source to provide to the faculty as it provides a brief description for understanding the importance of culture and how this material can be added to the current curriculum. The one-page summary includes an abstract, keywords, and a basic synopsis of each of the topics in the study guide.

Figure 2 shows an image of the one-page summary. As previously mentioned, the summary includes:

- Title of the study guide
- Name of the student author
- Abstract from the original study guide
- Keywords from the original study guide
- Summary of the introduction
- Summary of the Background
- Culture defined
- Types of construction cultures
- Safety as a subculture
- Cultural Awareness
Understanding Culture Within the Construction Industry through Lifelong Learning (SLO 24)

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Understanding cultural differences is a crucial step for the success of a construction firm. Creating a common ground for diversifying the perspectives of individuals in the construction industry will prove to progress the success of a company and the projects that are a part of those firms. This study guide will define what culture means for construction, the different types of cultures in the construction industry, as well as how to implement cultural background in our education for cultural understanding. The result will be an understanding on how culture poses a risk to construction and how these risks can be mitigated.

Key Words: Cross-cultural Training, Organizational Culture, Safety Climate, Cultural Awareness

- **Introduction**: The purpose of this study guide is to cover material on the new SLO 24 – understanding cultures criteria. The study guide will go in depth on the definition of culture, culture types, safety, and cultural assessment strategies.

- **Background**: The construction industry has a predefined culture that has been created through several generations of workers. The industry is seeing a shift in technology standards and innovative demands that new generations are pushing for. These differences can cause a clash in internal company relations. Therefore, it is important to understand how people work in order to efficiently work together.

- **Culture Defined**: This first section defines culture and highlights two key components needed to teach the expectations of a company.
  - **Leadership**
    - **Tools**
  - **Types of Construction Culture**
    - **Organizational Culture**: Each company has its own way of doing things. The organization of a company contributes to its overall culture. This section defines four different organizational cultures that a company can adopt for success.
      - Clan Culture
      - Adhocracy Culture
      - Market Culture
      - Hierarchy Culture
    - **Partnership culture**: Construction company’s value the relationships they form with other companies to create a successful project. This section discusses the potential risks of culture clashes within partnerships and how to mitigate these risks.

- **Safety as a Subculture**: No matter what type of organizational culture a company adopts, the construction industry places safety as the number one concern. This section will discuss the difference between safety culture and safety climate. It will then go into more depth on the key characteristics for an effective safety culture and the key factors that contribute to a safe climate. Finally, it discusses intervention strategies for addressing a safe construction climate.

- **Cultural Awareness**: To sum up the study guide, the cultural awareness portion highlights three possible strategies for increasing cultural awareness. These include the Organizational Culture Assessment Instruments, Cross Cultural Awareness Training, and Foreign Language Requirements.

Figure 2: One Page Summary, SLO 24 (Schrank, 2020)

The One-page summary was a challenging feat to complete as it had to provide an effective summation of the ten-page report onto one page. The goal of this portion of the project is to provide the faculty with the important topics that made up the study guide. In turn, when reading the study guide, the faculty will not be blindsided to the topic that they are diving into. The one-page summary can act as a reference to identify if this curriculum is worth implementing into the current learning structure for the Cal Poly Construction Management Department.
Survey Questions & Results

The joint survey sent out to the students was used to identify whether this new curriculum would be a useful topic for the students to understand. Neither the study guide nor the study guide questions directly used the results in the information. Rather, the information from these results is used in this final summation to determine the significance of understanding culture as a lifelong learning tool.

The following information shows the survey questions and their results for the SLO 24 topic.

1. Do you think that a required language course (i.e. Spanish) would be beneficial for your professional development?
2. Do you think if you understood the importance of integrating cultural backgrounds (via workshops, course lesson plans, etc.) would shift the way you interacted with your peers/colleagues?
3. If so, how do you think these interactions would change?
4. Please respond to the following: (1) Do you think if people understood your cultural identity, they would have a better understanding of how to approach you? (2) Do you feel more comfortable in collaborative settings when there are other individuals similar to yourself?

From these questions, the survey received 80 responses. Question #1 required a yes, a no, or a maybe. Question #2 required a yes, no, or a maybe. Question #3 required a short answer. Question #4 required a short answer.

- For question #1, of the 80 responses, 55% of them said yes, 10% said no, and 35% said maybe.
- For question #2, of the 80 responses, 50% said yes, 17.5% said no, and 32.5% said maybe.
- For question #3, most of the answers discussed that understanding culture would provide students with a better understanding of others. Some provided more detail, mentioning that construction is a culturally backed industry that has diverse individuals from a variety of different backgrounds.
- For question #4, most of the answers provided were a short “yes” answer for both questions without providing much detail. Few answers gave an explanation.

Ultimately, it was decided that the results from the survey did not provide enough detail as to whether the students could benefit from the SLO 24 curriculum. Therefore, the student did not use the survey as a substantial source for their project.

Conclusion and Future Research

In September 2020, the Construction Management department allowed five students to assist the faculty members in researching new Student Learning Outcome topics. These students were paired up with five other students from the CM 461 class to develop a study guide and study guide questions that coincide with this potential new curriculum. In this task, the students were given a set of different deliverables to complete which included a study guide, study guide questions and answers, a one-page summary, and survey data.

The deliverables were executed in a timely manner in hopes to be completed by the end of the quarter, in December 2020. The main deliverable of the project, the study guide, is the most vital resource for
identifying whether this new knowledge is significant for the department’s learning criteria. The information in the study guide gives the most in-depth analysis of understanding culture for the construction industry. Next, the study guide questions aimed to test the student’s knowledge of the material through a series of eleven multiple choice and eleven short answer questions. The one-page summary is then provided to the faculty as a summation of the highlighted research. Finally, the survey was used to interpret whether the current students in the department deem this new knowledge as necessary or not. All of these deliverables will be utilized in the following years as a resource for the new SLO 24, Understanding Culture Within the Construction Industry through Lifelong Learning.

The goal of this new cultural understanding learning outcome is to prepare students on how to deal with different organizational cultures when entering into their career. Understanding organizational cultures and how it affects partnerships, relationships with employers and employees, and the self can benefit students when trying to pick a career path upon graduation. By emphasizing safety as a subculture of construction, the stems back to the intent that safety is the top priority, no matter what industry someone falls into. Cultural understanding can be an effective tool in collaborative efforts. Teamwork is emphasized in school and on all projects. Thus, cultural awareness can be vital for the efficiency of a team.

As a result of the inconclusive data derived from the study, the information from the study guide must be enhanced by future students to create a more cohesive curriculum. Future students looking to research this topic will be able to use the original study guide as a starting point. From this study guide and a new literature review, new researchers can pick and choose information that they think is necessary for creating a new curriculum that identifies the importance of understanding culture within the construction industry for lifelong learning.
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