Satisfying the Need for Diversity Training for Hispanic Construction Workers and Their Supervisors at US Construction Workplaces: A Case Study

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Abstract: The representation of the Hispanic construction workforce has substantially increased over the last 15 years, and it continues to increase. Because of this, the Hispanic construction workforce represents a crucial segment of the US construction workforce. Unfortunately, the safety performance of Hispanic workers has been documented as an area requiring special attention due to the higher rates of fatalities and nonfatal injuries among Hispanic workers. Active cultural differences (ACDs) have been identified as one of the causes that negatively influence the performance of diverse construction crews. Therefore, the construction industry strives to adopt novel management techniques to better manage diverse crews. Accordingly, this study illustrates a training module that provides the knowledge to help construction firms overcome the undesirable influences of ACDs and strengthen their desirable effects. The findings strongly suggest that the proposed training is accepted by construction personnel. The proposed training would not only improve the overall safety performance of diverse construction crews but also positively influence other project success factors such as quality, productivity, and crew performance. **DOI: 10.1061/(ASCE)CO.1943-7862.0001663.** *© 2019 American Society of Civil Engineers.*

Introduction

The construction industry faces a shortage of skilled workers in the United States. According to the AGC (2015), 76% of construction firms face difficulties finding skilled workers in the United States, which causes a severe gap in the need for skilled labor. Similarly, Taylor et al. (2016) found that 52% of surveyed construction companies have been impacted by the shortage of skilled workers. Thus, Hispanic workers actively fill the need for skilled workers and currently represent roughly 30% of the construction workforce (Dong et al. 2016). In some states, such as California and Texas, the Hispanic workforce represents the majority of workers in construction workplaces (Al-Bayati et al. 2017b). Although Hispanic workers are filling the shortage through their characteristics like being hardworking and accepting of site conditions, studies reveal that they face a higher rate of fatal and nonfatal injuries (CPWR 2013; Flynn 2014; Al-Bayati et al. 2017a). On average, Hispanic workers were more likely to get killed at construction workplaces by roughly 12% when compared with non-Hispanic workers between 2005 and 2016 (Al-Bayati and York 2018). In general, many research studies have found that ethnic minority construction workers are more likely to get injured (both fatal and nonfatal injuries) across the world (Lyu et al. 2018). There are several causes of this trend beyond the level of exposure to unsafe conditions such as language and cultural barriers. Accordingly, it has been suggested that the difference in cultural values is one of the causes of higher fatality rates among ethnic minority construction workers (Thompson and Siddiqi 2007; McGlothlin et al. 2009; Girmscheid and Brockmann 2010; Al-Bayati et al. 2017b). There are 15 international studies that highlighted the importance of managing cultural diversity at construction sites (Chan et al. 2016). Only 2 of the 15 studies discussed cultural diversity at US workplaces: Flynn (2014) and Organista et al. (2010). However, there are few, if any, provided a training module that could help construction firms manage cultural diversity.

Canales et al. (2009) discussed the possible influence that cultural differences might have on the overall safety performance of Hispanic workers. Canales et al. (2009) used the cultural dimensions explicated in the Hofstede theory as a point of departure for the development of a training program for Hispanic-American construction crews. The decision to use Hofstede's theory is justified because Hofstede's cultural values have been replicated by several researchers and are widely accepted across the field. Hofstede's theory suggests that the social environment typically forms an individual's cultural values and perspectives. Therefore, it is possible to predict individuals' responses when the nationality of the individuals is known (Hofstede et al. 2010). Canales et al. (2009) discussed the following five cultural dimensions: (1) individualism versus collectivism, (2) power distance, (3) uncertainty avoidance, (4) masculinity versus femininity, and (5) the time dimension. However, the training courses developed by Canales et al. (2009) focused on language barriers and did not include cultural differences. Al-Bayati et al. (2017a, b, 2018) empirically tested the Hofstede theory and identified only three cultural dimensions that influence the overall safety-related activities of Hispanic workers and their supervisors. The three dimensions are: (1) individualism versus collectivism, (2) power distance, and (3) uncertainty avoidance. An explanation of why only three dimensions should be considered is beyond the scope of this paper. However, interested readers may refer to a recent article by Al-Bayati et al. (2018), where this topic is discussed in more detail. Generally, the findings of Al-Bayati et al. (2017a, b, 2018) suggested that Hispanic workers have higher power distance than non-Hispanic workers. Accordingly, Hispanic workers may not express their needs and concerns directly to their supervisors. In addition, the finding suggested Hispanic workers have higher collectivism culture than

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non-Hispanic workers. This means Hispanic workers prefer to work with their family members and close friends and may not trust outsiders, including their supervisors and government agencies. Finally, the findings suggested that Hispanic workers have high uncertainty avoidance when compared to non-Hispanics. Accordingly, Hispanic workers would need as many details as possible to properly execute their tasks.

The findings of the empirical investigation revealed a dire need for a training course that targets Hispanic workers and their supervisors. The role of construction supervisors in reducing the undesirable influences of cultural differences is pivotal. Construction supervisors represent a vital key in enhancing workplace safety through their role as a link between workers and upper management (Rojas 2013). Accordingly, they must understand the cultural values of Hispanic workers to be able to understand and address their concerns and needs. The training should provide an understanding of the nature of cultural differences and their influences. This training is imperative because understanding cultural differences is the key to conducting business across cultures (Phan et al. 2005; Girmscheid and Brockmann 2010; Casey et al. 2015). Furthermore, cultural diversity can cause substantial damage if construction firms decide to ignore it (Chan and Tse 2003; Loosemore et al. 2012; Al-Bayati et al. 2017a). If these differences remain unrecognized and unmanaged, it can lead to unshared assumptions regarding work, safety, and workplace behavior (Al-Bayati et al. 2018). These unshared assumptions can adversely affect workplace communication, which in turn affects safety performance and other construction outcomes such as quality and productivity (Al-Bayati et al. 2018; Casey et al. 2015; Mitropoulos and Memarian 2012). Accordingly, understanding Hispanic workers' values would not only help improve overall safety performance but also improve other construction outcomes. Such outcomes can range from quality of construction work and safety management to on-time completion, which substantially increases the importance of diversity training (Loosemore et al. 2012; Al-Bayati et al. 2018).

Training and Improvement

Construction firms consist of a group of people who communicate daily. Communication is vital to maintaining overall site safety (Burke et al. 2011; Törner and Pousette 2009; Mitropoulos and Memarian 2012; Casey et al. 2015). Therefore, top management and safety personnel should ensure that the daily communication runs as smoothly as possible. This can be achieved through continued education and awareness training. In general, training prepares trainees with new or traditional skills and provides information to be used in practice to improve the overall effectiveness of trainees, as well as their firms (Rafiq 2015). Lack of training, or ineffective training, is often tied to work-related accidents (Lin et al. 2018). Accordingly, training should be reviewed as an investment activity (Sanders 2011). Several publications recommend cultural sensitivity training strategies that address the needs of foreign workers. These strategies have been identified as a crucial component in improving work conditions for foreign workers (Al-Bayati et al. 2018; Flynn 2014; Naoum et al. 2015; Loosemore et al. 2012; Brunette 2004). However, it was not clear in these publications which cultural values should be communicated and discussed in depth. Therefore, further investigation has been recommended to identify the important cultural diversity factors between different ethnic groups (Loosemore et al. 2012).

Recent publications revealed three active cultural differences between Hispanic workers and their supervisors at construction sites. These are high power distance, collectivism, and uncertainty avoidance (Al-Bayati et al. 2017a, b, 2018). Active cultural differences (ACDs) refers to differences in cultural values that may impact overall site safety (Al-Bayati and Abudayyeh 2016). Certainly, the lack of knowledge about these identified active cultural differences leads to communication deficiencies. The following are potential impacts that may result from the lack of proper knowledge and management of active cultural differences (Al-Bayati et al. 2017a):

- High power distance refers to the view of society of work positions' authority or power. Hispanic workers, in general, have higher power distance than non-Hispanic construction professionals. Hispanic workers are accustomed to societies that use a centralization of power, and they are expected to be told what to do (Canales et al. 2009). Accordingly, Hispanic workers may not discuss safety issues or unsafe tasks with their supervisors. For example, Hispanic workers often do not express their feelings and concerns about an unsafe task. Therefore, Hispanic workers may be more exposed to unsafe conditions.
- Collectivism refers to a tight relationship between individuals within a group of people; that is, everyone takes care of others in his or her group. Hispanic workers, in general, carry a collectivistic culture. Accordingly, relationships (i.e., loyalty) between Hispanic workers are very valuable and prevail over tasks. Accordingly, an employer who hires Hispanic workers may notice that Hispanic workers, in general, act to the interest of the "in-group" (Canales et al. 2009). On the other hand, this cultural value may help in enforcing site safety, if managed well, because Hispanic workers tend to take care of each other.
- Uncertainty avoidance refers to the attitude toward controlled tasks. A controlled task is a task that is very well explained (i.e., step by step). Workers with a high uncertainty avoidance culture such as Hispanic workers prefer controlled tasks. However, recent studies have suggested that construction supervisors are not aware of this preference of Hispanic workers (Al-Bayati et al. 2017a). The difference in this cultural value between Hispanic workers and their supervisors has indirect influence on construction safety due to its influence on overall communication. Accordingly, Hispanic workers who need comprehensive details about their tasks rarely receive what they are looking for due to communication deficiency (Al-Bayati et al. 2017a). As a result, Hispanic workers may be involved in unsafe work activities due to unintended lack of information or supervision from their supervisors.

With this information in mind, an effective training module to overcome the undesirable influences of these differences in cultural values should be provided to both Hispanic workers and their supervisors. Generally, a needs assessment must be completed before a safety training design is implemented. This is to ensure that the training meets the needs of the participants (OSHA 2010a). The need for cultural diversity training for Hispanic workers and their supervisors has been clearly identified in many publications (Nash 2004; Brunette 2004; González 2006; Sanders-Smith 2007; Canales et al. 2009; Mcglothlin et al. 2009; Flynn 2014; Al-Bayati et al. 2017a; Flynn et al. 2018).

Study Goal and Design

The ultimate goal of the study is to reduce the higher rate of fatal and nonfatal injuries among Hispanic workers. The aim will be achieved through creating a training module that improves communication between Hispanic workers and their supervisors. Accordingly, the study will specifically deliver the following: (1) creating a new training module that communicates the recent findings regarding the nature and influences of active cultural differences

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to Hispanic construction workers and their supervisors; and (2) ensuring that the proposed training is valid and appropriate for US construction sites through a preliminary (pilot) evaluation.

To ensure the quality of the proposed training, the design has adopted several compatible and effective instructional delivery methods suggested by Hodell (2011) and Lord (2007). Accordingly, the following are the instructional methods that will be included in the proposed training:

- Lecturing—In this method, written material will be read before an audience. Based on the cone of learning, people tend to retain up to 20% of what they read and hear. As a result, this method should be used with other methods to improve the quality of the suggested training strategy.
- Role-playing—This method allows learners to experience the role of individuals engaged in training aspects and fully understand learning objectives. Based on the cone of learning, people tend to retain up to 50% when participating in role-playing and watching a demonstration.
- Active Learning—This is an interactive method that allows participants to share their experience and perspective regarding the training. Based on the cone of learning, people tend to retain up to 70% when participating in a discussion.

In addition, the proposed training satisfies the following adult learners' needs suggested by Knowles et al. (2011):

1. Adult learners need to know why they are learning about the training. Accordingly, the following points should be communicated to the trainees (i.e., construction supervisors and Hispanic workers) to illustrate why the training is important to them:
   a. Diversity exists in every construction workplace. The lack of knowledge regarding diversity leads to communication deficiencies.
   b. Communication deficiencies lead to a high probability of work-related accidents, as well as impacting quality, productivity, teamwork, and the worker-supervisor relationship at the workplace.
2. Adult learners need to apply their experiences during the training. Accordingly, the training will be relevant to their daily experience. The design of the training will ensure that the participants share their experiences to fulfill this need.
3. Adult learners need to be in control of their training. Participants (i.e., workers and supervisors) will have the opportunity to share their concerns. The design also addresses this need by openly discussing cultural diversity and asking participants for suggestions.
4. Adult learners need to learn things that make them more efficient and successful because they are goal-oriented. This need has been achieved in the design of the training by showing how the training will benefit the participant in their daily activities. Role-playing and discussion techniques will ensure that participants know how to use the knowledge they gain in their daily practice.

Training Evaluation

According to Kirkpatrick and Kirkpatrick (2006), there are four levels for evaluating training modules: (1) measuring trainees' reaction, (2) measuring the learning, (3) behavior (i.e., maintaining the learning), and (4) results (i.e., using the learning). The following are the descriptions of each level:

1. Reaction

   Trainees should react favorably to the training to indicate its effectiveness. Otherwise, they will not be able to apply the training knowledge in their daily life efficiently. Thus, it is important to measure the trainees' reaction to understand the strengths and weaknesses of the training program. It is also important to collect trainees' suggestions and comments for future improvements. Appendix II includes the form used to evaluate the reaction of participants in pilot training.
2. Learning

   The training should deliver one or more of the following learning objectives: knowledge, skills, and attitudes. This training provides information regarding identified ACDs (knowledge) and best practices to overcome their undesirable influences (skills). It is expected that there will be a change in the trainees' behavior based on the new knowledge and skills. Thus, it is crucial to measure learning at the end of the training to evaluate the training's effectiveness.
3. Evaluating Behavior (maintaining the learning):

   Successful training must be translated into actions that result in new skills and knowledge having been gained during training. Clearly, evaluating behavior is complicated, and the following reasons stated by Kirkpatrick illustrate this further (Kirkpatrick and Kirkpatrick 2006):
   a. Trainees will need an opportunity to change their behavior. Thus, it is not enough to simply educate workers and their supervisors on ACDs. Rather, a strong management commitment is required to give an opportunity to the workers and their supervisors to practice what they learn.
   b. It is difficult to predict when trainees will decide to use an opportunity to show the change in their behavior. They may or may not take the first available opportunity.
   c. When a trainee has taken an available opportunity, he or she may decide on one of the following:
      (1). I like the outcomes, and I will continue to use the knowledge and skills that I received from the training.
      (2). I like the outcomes, but I noticed that my supervisor does not like them. Therefore, the training instructions are not helpful to me.
      (3). I do not like what happened, and I will never do it again.

   To ensure the trainee will choose the first option, supervisors must encourage and reward their employees who follow the training recommendations. Evaluating the worker's behavior will measure the effectiveness of the training as well as validating the recommendations (i.e., best practices). A survey instrument and interview with those who worked with the trainees should be implemented after a specified period of time to evaluate behavior and collect observations in order to verify that opportunities were given to trainees to change their behavior.
4. Evaluating Results (using the training):

   The most important outcome of any training program is the practical results. The results evaluation is required to measure the ways a crews' performance has improved, whether incidents decreased, and to see if there was an increase in team integration.

Training Module

The resulting training module consists of seven components; each one of them satisfies one of the recommended guidelines discussed previously. The following are the training components:

1. Training Introduction

   The main purpose of the introduction is to explain why there is a need for the training. The introduction will present statistical data that show the continuous increase in the Hispanic workforce's representation and corresponding fatality percentage over the years in the US construction industry. The introduction will also include the traditional remedies adopted and provided by the industry.

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Table 1. Sample of best practices introduced to participants

Active cultural difference	Best practices	
	Construction supervisors	Hispanic workers
High power distance	• Do not take the silence of Hispanic workers as a sign of comprehension. • Increase the frequency of safety walks to ensure that all workers, including Hispanics, have a full understanding of the ongoing tasks.	• It is fine to ask questions or discuss the assigned tasks when the instructions are unclear or unsafe. • Your supervisor needs to know your concerns regarding your daily activities; it is part of your job to communicate issues and concerns to your supervisor.
Collectivism	• Appoint a safety leader among Hispanic workers at your site to work as a bilingual cultural moderator. • The appointed safety leader must have an acceptable knowledge of ACDs and a strong commitment to improving site safety.	• Keep your eye on your close friends and family members at the workplace to be sure they are safe. • Encourage your close friends and family members to avoid unsafe conditions and ask questions when the instructions are not clear.
Uncertainty avoidance	• Provide detailed instructions even though Hispanic workers do not often ask for them. • Encourage your workers to ask questions, to clarify their tasks when needed through a rewards and bonuses system.	• A good worker should always ask his or her supervisor for detailed instructions when needed. • Asking for details does not show inexperience and weakness. It shows the workers' interest in doing their job correctly and is a quality that every employer likes to see in his or her employee.

2. Active Cultural Differences Definition

   It is crucial to introduce the concept of ACDs to the participants as well as their potential influence. The definition will extend to present the three identified ACDs as well as their desirable and undesirable influences. The following are the main objectives of this segment:

   a. Identify what happens when there is a lack of knowledge regarding ACDs.
   b. Present the identified ACDs.
   c. Present the desirable and undesirable influences of ACDs.

3. ACD Discussion

   The participants will be asked to share their observations and experiences regarding the identified ACDs. The discussion will help connect the participants to the subject of the training.

4. Best Practices

   Best practices that need to be followed by supervisors, as well as Hispanic workers, are introduced to trainees at this stage. These best practices will help participants develop skills that allow them to overcome the undesirable effects of ACDs. There are two set of recommendations: (1) recommendations for supervisors and (2) recommendations for workers. The training may include both supervisors and Hispanic workers together or one group at a time. Table 1 illustrates a sample of the proposed best practices for construction supervisors and Hispanic workers to overcome the undesirable influence of ACDs.

5. Best Practices Discussion

   It is crucial to discuss the validity of the suggested best practices among participants. The best practices discussion should be in a small group to allow all participants to come up with a scenario based on their previous experience. This structure also gives over some control to participants, which will increase participation and retention. It is recommended that both Hispanic workers and their supervisors attend the training together to have an open discussion that evaluates and improves the best practices. The open discussion may result in different tailored best practices for the workers and supervisors.

6. Role-Play

   Demonstrate best practices using the reenactment of a specific situation, where participants in the training assume the roles in the made-up role description (role-play). It is important to practice the suggested and discussed best practices because the exercise will help participants fully understand the steps they should take in their daily work to improve communication.

The proposed module consists of three role-play scenarios that address two cultural dimensions: one to address high power distance and two to address uncertainty avoidance. Each scenario starts with a description of a safety situation on a construction site. After reading the role-play scenario, which should be provided in Spanish for Hispanic workers, the participants should be divided into groups of two. Each person will play the role of the scenario characters and create his or her own reactions based on the best practices discussed in a prior training session. The following is one of the role-play scenarios that were discussed during the pilot session:

A supervisor asks a worker to place a water pipe in a 6-ft-deep trench. There are no safety steps that have been taken to prevent a cave-in. Even though the worker has a concern about his safety due to the probability of cave-in, he decides to enter the trench.

Questions:

What is the ACD that exists in the scenario?

Answer: High power distance may prevent the worker from speaking up against an unsafe condition.

What should the supervisor do to improve communication and site safety?

Answer: The supervisor should explain why no precautions were taken to prevent a cave-in.

What should the worker do to improve communication and site safety?

Answer: The worker should communicate his concern to the site supervisor and explain that he thinks the condition is unsafe. If his supervisor does nothing, then he should talk to the management team and even contact the Occupational Safety and Health Administration (OSHA) if no corrective action is taken.

7. Final Discussion

   Open the floor for the final discussion by asking participants to provide an example of how they will use the training knowledge when they return to work.

Table 2 illustrates how each component corresponds to one of the general guidelines of Hodell (2011) and the adult learners' needs of Knowles et al. (2011). The total duration of the proposed training model is two and a half hours. Table 3 presents the training content outline with the estimated time for each topic.

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Table 2. Training component purpose and instructional methods

Component number	Purpose—adult learning needs	Instructional methods
1, 2, and 4	Why they should take the training	Lecture
3 and 7	Adults need to apply their experience during the training	Discussion
5	Adults need to be in control of their training	Discussion
6	Adults need to learn things that make them more effective and successful because they are goal oriented	Role-play

Table 3. Recommended time of training components

Component	Recommended time (min)
1. Introduction of the training.	10
2. Define active cultural differences and their influences. a. Identify what happens when there is no knowledge regarding ACDs. b. Present the identified ACDs as well as their desirable and undesirable effects on overall site safety.	20
3. Have participants talk about their experiences regarding ACDs.	30
4. Present the best practices that need to be followed by: a. Supervisors b. Workers	30
5. Discuss the best practices in small groups where the participants should come up with a scenario based on their previous experiences.	30
6. Demonstrate the best practices using reenactment of a specific situation by the participants based on a made-up role description (role-play).	30
7. Discuss any concerns and questions about the procedure.	20

Preliminary Evaluation

Due to current limited resources, only levels one and two (i.e., reaction and learning) will be evaluated at this stage. A partnership with the Latino Workers Safety Center (LWSC) in Hillside, Illinois, was established to recruit participants. Accordingly, a group of 14 construction practitioners and trainers underwent the training. The participants were four Hispanic construction workers, five OSHA-authorized trainers (who are mostly Hispanic individuals as well), and four construction establishment owners. In addition, an OSHA officer from the Chicago office also attended the training session. The primary goal of the evaluation was to measure the participants' reaction and knowledge as a result of the training. The participants were required to complete a short quiz and an evaluation form at the end of the training module. The questions in the evaluation form used a 5-point Likert scale wherein the five possible answers were the following: excellent, very good, good, fair, and poor. The form was designed to collect participants' reactions to validate course content for its relevance to construction site safety; see Appendix I.

In general, the participants found the topic interesting and useful. A sample of feedback on the importance of the training materials is listed subsequently:

- Life and death.
- I need a better understanding of the other culture to do my job better.
- Increase communication between workers and management.
- Makes workers comfortable and safe.
- Being a white business owner, I need a better understanding of other cultures to better. do my job and to hire appropriately to accommodate their needs.
- Increase communication between workers and management, which increases trust and relationships among them.

Table 4. Training evaluation results

Evaluation aspects	Reponses		
	Highest	Lowest	Mean
Instructor			
Knowledge of subject matter	5	3	4.45
Listening skills	5	4	4.64
Presentation skills and delivery	5	2	4
Overall instructor rating	5	3	4.2
Course content			
Did the course achieve its objectives?	5	3	4.18
Exercises	5	1	2.82
Use of class time	5	2	4.182
Topics covered in too much detail	5	1	3.5
Materials			
Overall quality of course materials	5	1	3.91
I feel the training will help me do my job better	5	2	4.55
I will be able to apply much of the material to my daily activities	5	2	4.36
The material covered in the training was relevant to my job	5	3	4.73

The participants' answers to the evaluation of training materials section, which is the most important section in the pilot study, were encouraging. Table 4 summarizes the participants' scores relating to the instructor, course content, and course materials. The results show a strong agreement on the relevancy of the content and the possibility of applying training strategies during their daily activities. In addition, the results indicate a need to improve the course content. These scores are significant because they indicate that first-time cultural diversity training was considered related and useful for improving the performance of daily construction activities. The responses to the question "What would have improved the training?" were interesting and significant as well. The following is the list of suggestions that the trainees made to improve the current program:

- More exposure to the Latino workers' safety culture will improve the presentation and methods.
- More time, a printout of material and notes, and open table discussion on major topics, possibly employee and employer training together.
- Make it available to every employee at the company, including owner and management.
- Some of the titles do not apply to regular daily activities, for example, "high power."
- More actual scenarios with expected outcomes.
- More practical terms and fewer technical.

Eleven participants completed the knowledge evaluation quiz at the end of the training; see Appendix II. Similarly, the results indicated the participants gained the required knowledge to overcome the unwanted effects of active cultural differences. The participants' answers demonstrated that they understood the required basic knowledge to encourage the following:

- Initiate a productive conversation to overcome high power distance (i.e., one of the ACDs) between Hispanic workers and supervisors.
- Help supervisors take responsibility for initiating the conversation as well as encouraging it.
- Help supervisors provide as much detail as possible to overcome uncertainty avoidance.

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- Help supervisors understand and value the family and close relationships among their Hispanic workers and take advantage of the collectivism value.

Discussion

The relationship between crew members in construction sites should be considered one of the factors that contribute to construction project success (Raoufi and Robinson 2018). Additionally, Raoufi and Robinson (2018) suggested that there is a gap in construction project research on identifying factors that influence crew motivation. Crew performance, which was evaluated in terms of cost, quality, safety, productivity, and relationships between the crew members, was directly impacted by the level of crew motivation. One of the factors that influences crew motivation is cohesion, which can be defined as the bond between the crew members (Beal et al. 2003). The proposed training in this study would have a substantial effect on the bond between crew members at US workplaces. Thus, it is expected that the proposed training will elevate crews' performance in terms of safety, quality, and productivity (Al-Bayati et al. 2018).

Over the last 15 years, the safety performance of Hispanic construction workers has been investigated and discussed in many research studies due to the fact that Hispanic workers face higher rates of fatal and nonfatal injuries. As a result, several root causes have been identified, such as language and cultural barriers. Accordingly, the Occupational Safety and Health Administration has required employers to provide training in Spanish when Hispanic workers show limited English proficiency (OSHA 2010b). However, there have been few attempts, if any, to help construction firms overcome cultural barriers through training modules, even though cultural diversity can be a significant asset to construction firms if managed well (Chan and Tse 2003; Loosemore et al. 2012; Al-Bayati et al. 2017a). In the past, cultural diversity training has not been the focus of safety training modules. However, research shows that cultural values must be addressed on US construction sites as well as demonstrating how cultural values influence overall site safety. In the light of the current empirical findings, there should be an effort made to address the influence of active cultural differences through training modules. This paper illustrates the first attempt to transform the recent research findings into a training module that explains the nature and influence of identified active cultural differences as well as methods to overcome their undesirable effects. The primary results of this study show that the proposed module is acceptable and has the potential to help construction personnel improve their daily interactions with each other at US construction workplaces. The proposed module will certainly improve the performance of construction crews, which can, in turn, improve construction productivity, work quality, and safety performance. Moreover, the training module satisfies one of the two strategies (i.e., education strategy) suggested for managing foreign construction workers (Mahalingam and Levitt 2007).

Limitations and Recommendations

The findings suggest that diversity training that addresses active cultural distance is needed, beneficial, and compatible with the construction industry. However, the main limitation of this trial study is that only two components of Kirkpatrick's framework were evaluated. This decision is due to limited available resources (i.e., lack of available funding sources). Accordingly, a longitudinal study is highly recommended at this stage to measure behavior change (i.e., maintaining the learning) and overall results (i.e., using the training). Kuprenas et al. (1999) suggested the creation of a simple written training refresher course provided to all trainees to help maintain the knowledge gained during training modules might increase behavior changes. The refresher should illustrate the training key concepts in a way that is easy to discuss. On the other hand, using the learning could be measured through the improvement of crews' performance, which requires periodic site observations. To evaluate the overall results, Kuprenas et al. (1999) suggested follow-up meetings with trainees to evaluate the tools that were suggested in the training and their effectiveness. In general, changes in behavior and overall positive results would require frontline supervisors' commitment. Workers cannot adopt new behaviors without having their supervisors' support and engagement (Al-Bayati et al. 2018; Marin and Roelofs 2017). On the other hand, supervisors' support and engagement require top management enforcement and emphasis. Enforcement and emphasis represent the second strategy that has been suggested for managing foreign construction workers (Mahalingam and Levitt 2007). The other limitation is the number of the participants in the pilot test, which was only 14 individuals and therefore did not produce statistically sound results outside the study sample. However, the diverse background and experience of the participants provided acceptable and reliable results. Accordingly, the study and its findings are relevant. Thus, despite the limitations of this study, the development of a novel training module based on recent empirical findings is a significant contribution. This contribution would be a crucial part of future construction workforce diversity management techniques.

It is recommended that future studies focus on improving the training components and contents to satisfy construction industry needs based on participants' and experts' comments and feedback. It is also important to reevaluate the improved module with a bigger sample size to ensure its validity and reliability. This improvement should provide more innovative methods and training materials that fit the needs of individual construction firms based on the specialization of the firm undergoing the safety training program. Therefore, contractors should be part of future studies to ensure industry acceptance. The proposed training is important for Hispanic workers regardless of their English ability because cultural values are not connected with language proficiency. In addition, construction firms that employ Hispanic workers with limited English should translate the training into Spanish to help Hispanic workers understand and overcome active cultural differences. Finally, the different approaches available to deliver the training should also be evaluated to identify delivery methods and constraints that fit construction sites to maximize the benefits of the training.

Conclusion

The Hispanic workforce has substantially increased in US construction workplaces and continues to increase. Cultural barriers are identified as one of the root causes that lead to higher rates of fatal and nonfatal injuries among Hispanic workers. There is a lack of information needed to adequately assess and manage the cultural barriers in US construction workplaces. Therefore, the construction industry continues to overlook cultural barriers as a leading cause of fatalities and injuries among Hispanic construction workers. Recently, active cultural differences have been identified as well as their influences on construction sites. Accordingly, a training module has been created to overcome the undesirable effects of active cultural differences. The training evaluation data suggest that construction personnel accept the training module. The results also indicate that the module satisfies employees' and employers' desire to learn more about cultural barriers in US workplaces. However, further investigation is required to improve the course components and fully evaluate its effectiveness.

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Appendix I. Training Course Evaluation Form

Aspect	Evaluation				
	Excellent (5)	Very good (4)	Good (3)	Fair (2)	Poor (1)
Instructor					
Knowledge of subject matter					
Listening skills					
Presentation skills and delivery					
Overall instructor rating					
Course content					
Did the course achieve its objectives?					
Exercises					
Use of class time					
Topics covered in too much detail					
Materials					
Overall quality of course materials					
I feel that the training will help me do my job better.					
I will be able to apply much of the material to my daily activities.					
The material covered in training was relevant to my job.					
What would have improved the program?					

Appendix II. Learning Evaluation Forms

Learning evaluation form—workers				
Define active culture difference:				
To overcome high power distance, workers should communicate their concerns to their supervisors.				
True			False	
When a worker communicates his needs to a supervisor, what do you think the supervisor's action may be?				
Fire the worker	Hate the worker	Respect the worker		Punish the worker
High power distance may prevent workers from:				
Doing their job safely	Delivering a quality job	Asking questions		All the previous
Workers should ask as many questions as they want in order to do a good-quality job.				
True			False	
Workers who do not ask for details that they need may:				
Get injured	Deliver a low-quality job	Use the wrong tools		Get fired because all of the previous

Learning evaluation form—supervisors				
Define active culture difference:				
To overcome high power distance, supervisors should encourage their workers to ask and share their concern.				
True			False	
When a worker communicates his needs to a supervisor, the supervisor will:				
Fire the worker	Hate the worker	Respect the worker		Punish the worker
High power distance may prevent supervisors from:				
Improving their site safety	Delivering quality construction outcome	Understanding their workers' issues		All the previous
Supervisors should provide detailed instructions as much as they can to their workers.				
True			False	
Supervisors who neither provide detailed instruction to their workers nor encourage them to express their needs and concerns may face:				
Higher rate of work-related in injuries	Completion delay due to work redo	Increased spending due to property damages		Getting fired because all of the previous
The supervisor should consider the collectivism culture of their workers and designate a safety leader from among them.				
True			False	
The supervisor should provide the following to the designated safety leader.				
Knowledge (i.e., safety regulation and ACDs)	Authority	Full support		All the previous

Data Availability Statement

Data generated or analyzed during the study are available from the corresponding author by request. Information about the *Journal*'s data-sharing policy can be found here: http://ascelibrary.org/doi/10.1061/(ASCE)CO.1943-7862.0001263.

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