

# **Bilingual Advantages to the Construction Industry**

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The purpose of this paper is to analyze and emphasize the importance of the Spanish language within the construction industry to construction management students at Cal Poly. Knowledge within another language is also used at an advantage in the industry as it increases one's value through this key skill, and aids effective team communication on a project. Furthermore, the construction industry is filled with subcontractor's majority being of Latin-based descent. Though this key skill is not required by companies, this skill can help verbal communication barriers which occur on a project when most subcontractors only speak the Spanish language. Verbal communication is essential in every project as the passing of information is vital towards the succession of any project. Furthermore, the lack of verbal communication due to language barriers can dramatically hinder a project through safety, quality, schedule, labor productivity/efficiency, etc. It is, therefore, encouraged for students to advocate to learn the Spanish language to help bring advantages not only towards the individual, but to the industry itself. This research project will be conducted by handling fourteen survey questions, and to be distributed among all CM students along with anyone who has had a construction internship prior.

Keywords: Effective Verbal Communication, Spanish Language, Construction, Bilingual, Construction Management

## **Introduction**

Effective communication is essential within the construction industry as passing information from one person to another is vital to the succession of any project. Good communication within a project can ensure action items get completed accordingly with respect to the schedule and enhancing the overall quality of construction. Furthermore, verbal communication skills can help stabilize a project by improving teamwork, and project cooperation as not any project is constructed alone. Many of the subcontractors in the construction industry are of Latin-based descents and are only familiar with the Spanish Language. This raises a problem in effective verbal communication within the industry as language barriers bring misunderstandings, delays, and issues in the future to arise. Being bilingual not only helps an individual stand out when interviewing for jobs but can help a project run more effectively improving quality, safety, and labor efficiency/productivity. Even though being bilingual is not necessary, it is essential to enhance effective verbal communication skills to clear any misunderstandings which can hinder a project. Being able to effectively communicate with field staff upon the Spanish can help integrate between field, and office staff to help minimize possible rework.

The major concern is the language barriers between those on-site, and those in the office as the majority of subcontractors only speak the Spanish language within the construction industry. Most institutions do provide classes for students to learn foreign languages, but students really need to recognize that not only will this make them more competitive within the industry but also the advantages an individual can bring to a project through this essential skill. Advocating the use of being bilingual within institutions is essential so students know the significance it can make especially regarding the construction industry. The most widely used language in construction sites is the

Spanish language. Superintendents may be the only individuals that may be fluent in both English and Spanish and help bridge the gap between office staff and field. Furthermore, students wishing to go through a field engineer/superintendent route should consider taking a Spanish language class, and learning as much outside of class to become as familiar as possible within the language, sayings, etc. Therefore, if a superintendent were to miss a day for emergency reasons the project is at a setback due to possibly being the only individual bridging the gap between both sides of the field. Which begs the question that any office staff should be familiar as possible with the Spanish language so there are no misunderstandings, and mishaps which can inevitably harm a project whether being safety practices, quality of work, labor productivity, etc. Lastly, emphasizing the benefits of being fluent both in English and Spanish should be a priority for students within this institution.

## **Literature Review**

Subcontractors are on a tight schedule throughout a day-to-day basis and must meet specific deadlines to meet schedule needs because varying scope of works are dependent with one another. A way to manage all the varying scopes of work is using effective teamwork as no project is constructed by one person, but merely as a team effort. Whether a project is going good or bad by human nature to keep a project running, and stabilizing a project, team collaboration is needed to keep a project running efficient as possible. Teamwork is one of the most critical aspects of a project. Collaboration means effectively communicating within your team about action items and delegating these tasks appropriately while working together with one another. Such action items can vary in severity, and effective verbal communication throughout the project team can make a difference especially regarding increasing the safety of subcontractors. Increasing safety precautions for subs frees more time for them focusing on other matters such as productivity, and quality. Realistically, subcontractors may not be willing to learn the English language, and to bridge the gap between the two the office staff must learn the Spanish Language. The best possible outcome is for any office staff to learn the Spanish language to help bridge the gap between the two. Therefore, establishing knowledge in the Spanish language can resolve any disputes from both parties which can be essential when analyzing problems early-on, and solving these conflicts once they arise.

Language barriers within construction can pose safety hazards to subcontractors as through language is how we convey ways to be aware of tasks which violate a safety hazard. According to Loosmore and Andonakis (2007), there is relatively high levels of language related problems regarding occupational health and safety regulations in plumbing, carpentry, form working, electrical, bricklaying and steel fabrication. In addition, conveying messages during daily toolbox talks before work commences can be crucial when the team does not understand certain terminology, and so forth cannot identify risks to be aware of on-site. Effective verbal communication can make a huge difference in construction especially regarding life-or-death situations. A safety and healthy work environment also go hand in hand with productivity as lowering injuries helps improve productivity along with quality of work performed. In Demirkesen's own words, Hispanic construction workers experience a larger number of accidents presumably because of their lack of English language skills (Demirkesen, 2015 p. 1162). Majority of construction workers within the United States are Hispanic, and the truth is that to implement language programs would be a hard task to incorporate within subcontractors. Regardless, safety within a project should always be a number one priority, and by bridging the language barrier gap, workers would be more adequately informed towards safety training.

Thus, language barriers are interconnected with many underlying risks which can ultimately jeopardize the overall succession of a project. Moreover, language poses a threat to the industry as

misunderstandings can lead to time wasted, essentially lowering work productivity which must be governed appropriately to stay within budget. In a construction project, time is of the essence as time is money, and vice versa. Research undertaken by Paul Chan (2002) indicated that the lack of training implied the likely consequence of rework, which would affect productivity. In essence, lack of training in language can cause miscommunication within a project, and without the adequate level of training to day-to-day tasks can put the project at a setback. Subcontractors are then put at a disadvantage as most are only fluent in the Spanish language, so with office staff primarily speaking English, the project in question is already jeopardized in terms of productivity. Therefore, subcontractors primarily communicate with superintendents who may be the only individual to speak both languages on the project. Additionally, an entire project team should always be in the loop on what is occurring on a construction project, and effective verbal communication is needed to minimize any setbacks.

In contrast, quality can refer to a variety of standards whether being material, performance, and overall work performed. Abas states the level of success of construction projects greatly depends on quality performance as issues can lead to inefficiencies in terms of overrun, delays, and excessive rework (Abas, 2015, p. 1150). Furthermore, quality and productivity are heavily intertwined with one another as if one is jeopardized the other would also be causing a domino effect. Ultimately, effective verbal communication is vital within every project throughout the world as a lack of communication can compromise the following: safety, quality, and labor productivity which are key aspects towards the overall succession of a project.

The only way to diminish the Spanish language barrier between projects would be to introduce the Spanish language in the construction management curriculum. Additionally, incorporating a Spanish language course for students would help bridge the gap between office, and field staff for more efficient team collaboration. Superintendent of Truebeck Construction states “subcontractors struggle in language barriers on-site, and project would run much more smoothly if other than superintendents were well integrated into the Spanish Language” (Escobedo). The growing concern within the industry is the language barrier poses on the industry as it would be much more effective if individuals other than superintendents were fluent or familiar with the Spanish language.

Below emphasizes the survey of participants agree with the overall ranging from most serious to most negligible consequences of the English-Spanish Language Barrier. The effects are as follows:

Consequence	Total (all participants)	Super-intendents	Project Managers	Field Engineers	Other
Loss of Productivity/ Efficiency	22.4%	21.9%	22.6%	23.8%	19.5%
Greater Safety Risks	27.3%	29.1%	26.1%	27.5%	27.6%
Difficulty in Giving Instructions (Basic Jobsite Communication)	30.0%	29.8%	30.3%	30.3%	27.6%
Lack of Respect/ Diminished Team Atmosphere	17.9%	18.2%	16.7%	17.4%	25.3%
Other (Write In)	2.4%	1.0%	4.3%	1.0%	0.0%

Figure 1: “Consequences of English-Spanish Language Barrier” (ACTFL)

## Methodology

The question of whether you have ever experienced or witnessed language barriers between subcontractors and office staff is prevalent throughout the industry. A quantitative survey was conducted for this research study. The study aimed to seek data from the students past internship experience to emphasize the growing concern within the industry while promoting the use of the Spanish language. This involved data collection using a survey conducted of fourteen questions on language barriers and analyzing implementations which would help overcome these barriers. The questions were administered to students who have had a past internship experience within the construction industry in the seventh week of fall quarter (2nd November 2022 to November 18<sup>th</sup> 2022). Most individuals acknowledged the importance of the Spanish language and its integration into the construction industry as most students had experienced language barriers on-site. The purpose of the survey is to emphasize how essential a second language can be in the industry, specifically the Spanish language.

The project survey involved 39 students from Cal Poly where over 60% of students have experienced or witnessed language barriers on a project. Survey was also aimed to investigate challenges that arose due to language barriers present on a jobsite, and possible implementations to overcome these barriers to aid future students in their career path. The language barrier was a significant challenge regarding communication between office and field personnel. The survey (discuss advantages).

**Results**

2. What is your major?

● Construction Management	39
● Civil Engineering	0
● Mechanical Engineering	0
● Other	0

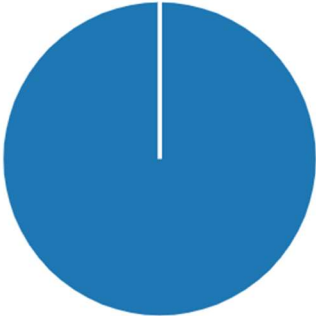


Figure 2: Question 2 of Survey

100% of the interviewed participants were students within the construction management program at Cal Poly.

4. What route are you planning to take after Graduation? Project Manager? Superintendent? Other?

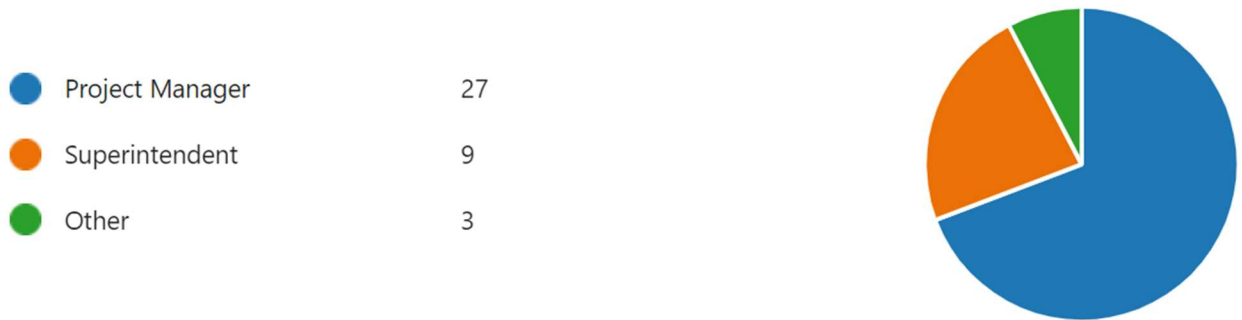


Figure 3: Question 4 of Survey

Majority of students would choose to undergo a project manager route with 70% of students, 23% of students chose to undergo a superintendent route, and 7% chose other to act as a construction consultant.

6. What is your proficiency level within the Spanish language ?

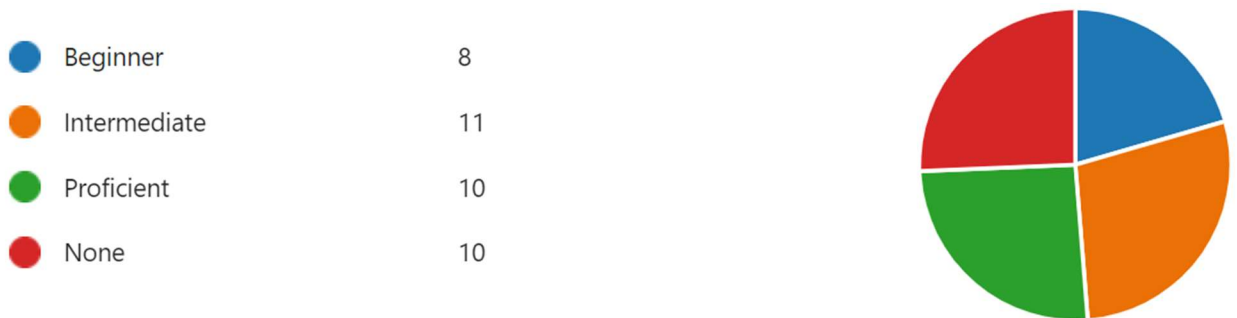


Figure 4: Question 6 of Survey

Proficiency languages differed for the Spanish language throughout as 20.5% had chosen beginner, 28.2% is intermediate, 25.6% is proficient, and 25.6% has no knowledge within the Spanish language

7. What is your ethnicity?

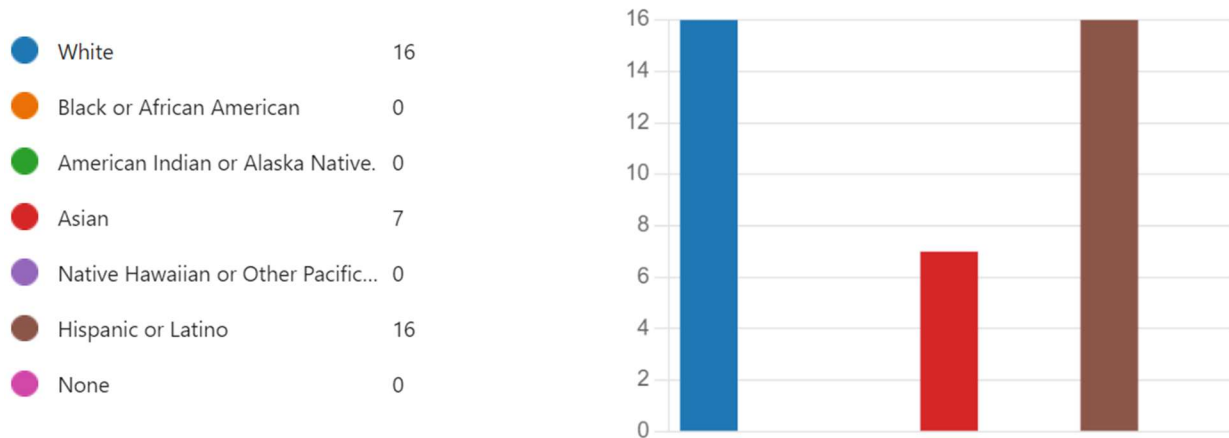


Figure 5: Question 7 of Survey

The majority of the interviewed student's ethnicity surprisingly tied within Whites, and Hispanic or Latino with third being Asians.

9. Have you ever experienced or witnessed language barriers between subcontractors and office staff?



Figure 6: Question 9 of Survey

The project survey involved 39 students from Cal Poly where over 60% of students have experienced or witnessed language barriers on a project.

10. Cont. from #9, please explain the situation on what occurred, and the outcome which took place?

Several of the responses were the following:

“In general, I find that some of our subs don't speak great English and it's harder to get across some important points like quality or a task that needs to be completed but wasn't mentioned earlier.”

“Just in terms of making sure everyone is on the same page, translations and vital pieces of information are missed. I.e., the order of operations for a complex ceiling install were slowed down by language differences between subcontractors”

“A painter for a subcontractor was by himself in a room on a lift and hit a fire sprinkler and tried to explain to a foreman of a different trade what happened but the laborer only spoke Spanish and the foreman didn’t understand. It took 5 minutes for them to communicate that a room was flooding with water from the busted sprinkler.”

“Pretty much everyone from my company only speaks English and everyone from the framing company we hire speaks Spanish. We were building some houses on an extremely tight schedule, and it was difficult to communicate that to all the workers on site.”

“During my internship we had a laborer who spoke mainly Spanish and very little English. Being on the same jobsite as him I would see him every day and try to talk to him. One day our HR rep asked me to have him sign 3 separate documents that the company needed on file. The issue was that the documents HR sent me were all in English. I had to wait until one of our superintendents was free so he could help explain the documents to him. This took place over 5 or so days so I couldn’t get the documents back to HR within the same day.”

11. In addition to question 10, what would be an effective implementation to overcome these language barrier struggles foreseen on a jobsite, and how it can impact inevitably impact a project ?

Several of the responses were the following:

“I think learning some construction terminology in Spanish and also teaching basic interactions in Spanish would be helpful.”

“Have someone on-site at all times that understands and is able to translate”

“It is important for every job site to have a person fluent. Signage is one example of a need that protects quality and safety on a job site.”

“A solution would be to have someone translate safety meetings in real-time. Having craftspeople with a limited understanding of safety topics increases the chances of accidents.”

“Potentially training office employees Spanish if they so choose. This would ease relationships between field and office.”

“I think offering classes for both the office staff and subcontractors to learn either more English, Spanish, or any other language so that it will be easier to communicate with each other.”

“I think that if a company would give their employees some type of incentive to take Spanish classes, then it would help communication on the jobsite and ultimately, help things move quicker. Also, maybe having Spanish be a requirement to take at college would be a good idea so that when first entering the industry, newly graduates would have some basic knowledge of Spanish, allowing them to learn it more quickly.”

12. If you are fluent with the Spanish language do you think it has impacted you in your construction internship regarding language barriers? If so, how ? If N/A please state so.

Several of the responses were the following:

“Makes communicating with the workers in the field a lot easier.”

“I think that I would have multiple job offers honestly. Genuinely, the Company I worked for with my internship would have loved it if there was constant communication between Spanish speaking crews, but we just didn't have that resources.”

“Yes, you get to connect with the laborers and hear them out with their concerns.”

“I have been able to understand all conversations, and though they haven't always been directed toward me I have been able to clarify things or suggest further explanation from my superiors.”

13. What possible solution do you think may be the most effective?

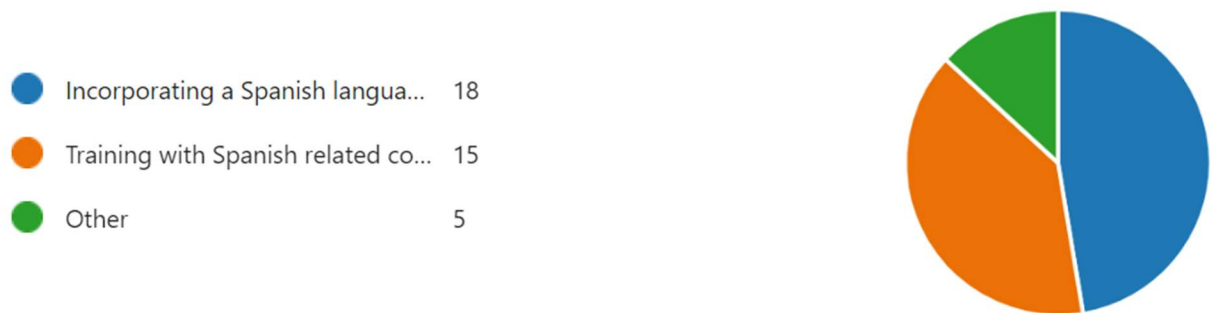


Figure 7: Question 13 of Survey

About 46.1% of students agreed to incorporate a Spanish language course in the CM curriculum, 38.5% agreed training with Spanish related construction terms to prep staff for daily coordination, and 12.8% said other.

## Analysis

The research showed that majority of students studying construction management in California Polytechnic State University have had more than one internship in the past while signifying that they have either witnessed or experienced a language barrier on-site. Predominantly, the highest number of students who accomplished survey were within reach of their final years of education. Whether planning to take on a project manager, superintendent, and various routes after graduation results have been proven to emphasize the importance of being bilingual within the industry. Furthermore, companies should not only depend on superintendents on bridging the gap between office, and field staff as superintendents cannot always be present on a jobsite. About 71.8% of students are not proficient within the Spanish language, and 58% of students are non-Hispanic who may be the individuals struggling within a language barrier in a predominantly white institution. Additionally, within the institution although there is a variety of students with diversified backgrounds the



construction management curriculum should focus on incorporating a Spanish language course to help better prepare students regardless of route they take.

Project survey involved 39 students where over 60% of students have either witnessed or experienced a language barrier through their internship. Moreover, student's follow-up answer after question number nine were vastly similar as they essentially lacked effective verbal communication with subcontractors. In essence, it was either causing some sort of confusion due to the language differences or it was too time consuming trying to understand one another without the presence of a superintendent. In essence, it can be extremely time consuming trying to convey information to another individual who does not understand the language well.

In addition, some effective implementations to overcome these language barrier struggles foreseen on a jobsite, and how it can inevitably impact a project slightly varied within students but are as such:

- 1) Ensure someone fluent within the language is always present.
- 2) Incorporate signage in various languages so it is always readable for subcontractors.
- 3) Translator to specifically translate safety meetings, toolbox talks, etc.
- 4) Offering English, and Spanish language course to both office, and field staff.
- 5) Spanish language course within CM curriculum

In essence, most students need a refresher from high school upon the Spanish language pertaining more towards construction as it will be more convenient. Nonetheless, majority of students voted on incorporating a Spanish language course within the curriculum to be most effective.

## **Conclusion**

The construction industry is an industry where it is heavily tied with effective verbal communication as to how specific tasks are dictated through team collaboration. Additionally, no project is constructed alone as work is strictly dependent on others by daily coordination. Effective verbal communication helps stabilize a project either through safety hazards, quality, labor productivity, and team coordination so a project can flourish. Subcontractors primarily speak one language, and being the Spanish language, the project is already put at a hindrance from the start by the lack of communication which can alter safety, quality, and labor productivity, etc as previously discussed. The Spanish language itself can be an essential key skill within the industry regardless of career path chosen as it would aid to bridge the gap between office, and field staff. In essence, to help minimize any drawbacks from lack of communication students should advocate upon learning the Spanish language as not only will be a huge advantage towards the industry but also towards their career.

Language disparities can cause misunderstanding and confusion further wasting time, and money. Inevitably these disparities hinder team coordination which is needed in every project so it may flourish. However, these situations can then be minimized by learning the Spanish language so one can bridge the gap between office and field. Not only will this make an individual more competitive within construction positions but can prove highly advantageous when effectively passing one information to another with no misunderstandings or confusion. This ability can then be gained within institutions construction management curriculum gearing more towards construction related to pertain to a project's needs.

## *Future Implementation*

## CM 422 Class Schedule

Class Description: This class will be a general overview of construction as it will be taught in both English, and Spanish language to interpret while pertaining more towards construction industry. Furthermore, students each week will be assigned a “Toolbox talk” assignment each week facilitating safety discussions for the given workday. These toolbox talks will be pertaining towards scenarios/events subcontractors should be aware about on-site for that significant day. Additionally, students will be given a set of construction related terms and will be to create a toolbox video in English and Spanish to help with pronunciation to help build confidence within the language. Given class schedule is as follows:

Week 0: Discuss syllabus, and general overview of class.

Week 1: Lecture on Tools/Materials.

Week 2: Lecture on Schedule.

Week 3: Lecture on Safety (Big Four OSHA).

Week 4: Lecture on Equipment.

Week 5: Lecture on Inspections.

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