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Feliciano, MaryAnn *Safety Training Impediments that Exist for Company XYZ English as a Second Language Employees*

Abstract

The purpose of this study was to identify the potential safety training impediments that exist for Company XYZ's ESL workers. The first goal of this study consisted of evaluating Company XYZ's training and testing materials for language that meets the needs of non-English speakers, both in communicating and assessing content. The second goal was to assess Company XYZ's safety training surveying methods used to determine ESL workers' ability to identify hazards associated with their work processes.

The researcher utilized scholarly articles, government agency databases, and established industry recognized standards to identify pertinent background knowledge on each goal. Two focus group sessions were conducted at Company XYZ to gather the management and employees' perceptions of the organization's safety training program. The researcher identified safety training impediments with the training materials being written/presented in English-only for ESL workers at Company XYZ. Based on the hazard assessment portion ESL workers had lower pre-test scores when the training was performed in English opposed to utilizing the translanguaging approach during the post-test. The researcher recommends that Company XYZ use the translanguaging approach for training its ESL population and work with an outside organization to provide free alternative based English courses for ESL employees.

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Table of Contents

Abstract2

List of Tables6

List of Figures7

Chapter I: Introduction.....9

 Purpose of the Study13

 Research Goals.....14

 Significance of the Problem.....14

 Assumptions of the Study15

 Limitations of the Study.....15

 Definition of Terms.....15

Chapter II: Literature Review17

 Foreign-Born Immigrants Migration to the United States17

 Foreign-Born Migration into the United States Labor Force.....19

 Fatality Gaps in the United States Workforce for Foreign-Born Workers23

 The Occupational Safety and Health Act.....24

 Safety Training Components28

 Recent Methods used to Survey ESL Workers Safety Training Knowledge30

 Summary.....41

Chapter III: Methodology43

 Subject Selection and Description43

 Instrumentation43

 Data Collection Procedures.....44

Data Analysis	46
Limitations	46
Assumptions.....	47
Chapter IV: Results.....	48
Demographic Information.....	48
Item Analysis	56
Summary.....	70
Chapter V: Conclusions and Recommendations.....	72
Purpose of the Study	72
Research Goals.....	72
Methodology	72
Conclusions.....	73
Recommendations.....	79
Additional Suggested Research	84
References.....	85
Appendix A: Health and Safety Manager and Supervisor Focus Group Questions	92
Appendix B: ESL Focus Group Questions	95
Appendix C: Translator Confidentiality Form.....	100
Appendix D: Consent to Participate in UW-Stout Approved Research	101
Appendix E: Company XYZ Recruitment Flyer	103

List of Tables

Table 1: Management Responses to ESL Recruitment.....	51
Table 2: Management Personnel FOCUS Group Interview Responses for Company XYZ Training Program.....	57
Table 3: ESL Personnel Focus Group Open-Ended Interview Responses for Company XYZ's Training Program	61
Table 4: ESL Focus Group Y/N Interview Question Responses for Company XYZ's Training Materials	63
Table 5: Management Personnel Focus Group Open-Ended Interview Responses for Company XYZ's Training Program	64
Table 6: ESL Focus Group Y/N Interview Question Responses for Company XYZ's Training Materials	66
Table 7: ESL Focus Group Hazard Identification with English Terms Only.....	69
Table 8: ESL Focus Group Hazard Identification with Visuals and Written in Multiple Languages	70

List of Figures

Figure 1: Fatal Injuries Involving Foreign-Born Workers, by Year	20
Figure 2: Number and Rate of Fatal Occupational Injuries to Civilian Works by Major Occupation Group	21
Figure 3: ACS 2006 Report: Percentage of Foreign-Born Workers by Industry	21
Figure 4: ACS 2017 Report: Percentage of Foreign-Born Workers by Industry	22
Figure 5: Fatal Work Injuries Involving Hispanic or Latino Workers 2003-16	23
Figure 6: Personal Background: Focus Group Ethnic Classification at Company XYZ.....	49
Figure 7: Personal Background: Number of Years ESL Employees at Company XYZ has Lived in the United States	50
Figure 8: Personal Background: Number of Years ESL Employees has Worked in a Manufacturing Industry	50
Figure 9: English Capabilities: ESL Employees First Language.....	53
Figure 10: English Capabilities: English Course Inquiry	53
Figure 11: English Capabilities: ESL Participants Perception of Communication Between Peers and Management.....	54
Figure 12: English Capabilities: ESL Participants Perception of Communication Between Peers and Management.....	54
Figure 13: Trainer’s Language Skillset.....	55
Figure 14: Trainer’s Skillset: Trainer’s Interest in Taking a Course to Learn Other Languages ..	55
Figure 15: Susan Hardwood Grant SH-19505-09 Ergonomics Training for General Industry Example	80
Figure 16: Company XYZ’s Current Computerized Hazard Reporting Database	83

Figure 17: Recommendation to Improve Company XYZ's Current Computerized Hazard

Reporting Database for ESL Employees84

Chapter I: Introduction

Communication is an essential component from a workforce training standpoint and is critical to employees' safety. Being able to effectively convey risk-based information to applicable employees is an essential component for an organization's safety culture (Main, 2004). It is important for employees to understand the company's policies and procedures, their roles and responsibilities within the organization, and how unsafe practices lead to injuries in the workplace (Occupational Safety and Health Administration [OSHA], 2015a). Although a basic need exists for employees in any organization to understand and follow safe workplace practices, the ability to follow such practices may be impeded when language barriers exist.

When a considerable percentage of a company's workers may be identified as English as a second language (ESL), training in safety practices would appear to be necessary to assure that all workers are able to exhibit understanding of the training that is provided. As of 2017 immigrants are more likely to work in manufacturing industry jobs, than natural born citizens (Bureau of Labor Statistics [BLS], 2018a). In 2007, 20% of the manufacturing workforce was comprised of Hispanic and Asian workers (Center for Disease Control and Prevention [CDC], 2010). Numerous foreign-born workers struggle with language barriers, as English is not their native language and thus are classified as ESL employee in the workplace. Language barriers represent a communication gap between ESL employees and management and thus has become a challenge for Health and Safety Managers (Wallerstein, 1992). If ESL employees do not understand risk based information, then it is entirely possible that such individuals may be unable to protect themselves.

Dating back to 1937, industries in the United States were classified using a Standard Industrial Classification (SIC) code (Baker, 2017). In 1997, the industry-specific SIC system in

the United States was updated to the North American Industry Classification System (NACIS) in an effort to standardized industry-specific data on an international level (Baker, 2017). Industry specific classification codes help federal organizations produce statistical data for various industry sectors (United States Census Bureau, 2017a). The Bureau Labor of Statistics (BLS) uses NACIS based data to track industry related injuries, illnesses, and fatalities on a yearly basis (BLS, 2017d). Industries use the injury loss-data to gauge overall performance and set performance measurement goals for its companies (OSHA, 2001).

A concerning statistic that Health and Safety managers are faced with involves the increase in work- related injury and deaths in English as a second language (ESL) employees' in the United States. In 2015, 605 foreign-born Hispanic and Latino workers died from a work-related injury which was significant increase from 429 deaths which occurred with this group of workers in 2009 (BLS, 2017c). According to The Center of Disease and Control (CDC), factors that contribute to work related injuries and deaths among English as a second language (ESL) employees include their inability to understand information from safety training, to identify unsafe work conditions, and to identify hazards due to language barriers (CDC, 2008). Ensuring that employees understand all risk-based safety information in a language that they understand is essential component to ensuring their safety (OSHA, 2015b).

Company XYZ is located in Illinois and is a small business comprised of 125 employees who manufacture various types of rubber products. Company XYZ industry classification code which is based on the organizations products and services is NAICS 326299. The demographic background of the ESL employees includes Asian and Latino workers who appear to have difficulty in understanding English. The leadership of Company XYZ established a three-phase goal that focuses on safety, quality, and customer satisfaction as the end goal. In the company's

Health and Safety Manual, it is noted that constant communication involving safety concepts must be provided to the employees through various training sessions and meetings, and the company strives to provide continual improvement and opportunities in their communication process. The company attempts to constantly communicate safety concepts by ensuring that management personnel conducts safety training sessions.

The Occupational Safety Health and Administration (OSHA) recommends that on a yearly basis, the health and safety professionals conduct annual training sessions for all employees within the operation. Based on Company XYZ's operations, the OSHA annual training list would include topics such as emergency preparedness and evacuation, lockout tagout of energy sources, respiratory protection, bloodborne pathogens, and chemical hazard communication. After each annual OSHA required training session, employees must complete a post-training test. Post training tests are comprised of multiple-choice questions based on information, which was presented during the OSHA-required safety training. From the researcher's experience in reviewing the post training tests, a vast majority of ESL workers left test questions areas blank. Due to the existence of blank test questions, non- ESL employees scored better on post training test than the ESL employees. It is believed that one of the primary reasons the ESL workers left test areas blank was due to their inability to read and understand the test question. In instances where ESL employees were struggling to read the test questions, several of their peers translated the test materials into the language that the ESL worker understood. Once the materials were translated, then the ESL circled an answer for the multiple-choice question, if the test question was a fill in the blank type, a second issue arose in that the ESL workers were typically unable to write the correct response in English.

Company XYZ strives to account for differing levels of ability, language skills, literacy, and the risk of its employees. One of the challenges with safety training materials at Company XYZ is that the documents are written only in English, although the base percentage of ESL workers in that company is 40%. Similarly, to the ESL workers inability to respond to post training tests that are written in English, ESL employees appear to not understand safety-related instructions written and orally presented in English. ESL workers do not perform as well as non-ESL employees on training tests because the information is not presented in the language that they understand.

Company XYZ developed a computerized hazard identification system in which all employees are encouraged to enter hazards that they encounter or observe. From the researcher's observations during the summer of 2017, non-ESL employees utilized the hazard identification system to a greater extent than ESL employees. In the instances where ESL employees utilize the hazard identification system, the commonly used hazard category was slip, trips, and falls. Upon further evaluation and discussions with ESL employees, the researcher discovered that ESL employees displayed limited understanding of other hazard categories. Being able to identify hazards are critical skills employees need to aid in mitigating illness and injuries (OSHA, 2015a).

A challenge that Company XYZ was faced with in 2016 was an increase in its Days Away Restricted Transfer (DART) rate. In 2014, Company XYZ's DART was 1.53 which was below the industry average of 2.5 (BLS, 2014). In 2016, the United States Bureau of Labor Statistics reported that the average total recordable injury rate for the NACIS industry code 326299, was 3.6 with an average DART rate of 2.5. (BLS, 2017b). In 2016, company XYZ's TRIR rate was 3.15 and DART average was 3.5. Company XYZ's TRIR was relatively close to

industry average and the DART rate was above industry average. In the summer of 2017 both ESL and non-ESL employees shared stories with the researcher of injury-related incidents that occurred during the previous calendar year. One of the ESL workers on the night shift suffered a serious injury to his hand that almost resulted in a hand amputation. In this incident, the ESL employee was manipulating the light curtain sensor on a machine. The light curtain stops the machine if it detects motion to prevent an injury. Because the light curtain sensor was manipulated, this created an exposed point of operation hazard which caused the machine to grab the worker's hand. A deficiency that was noted in the policy and procedure that detailed the steps of how to manipulate the light curtain. The deficiency in the policy and procedure and human error that contributed to this incident are considered symptoms, which according to Peterson (2003), reflect a deficiency on behalf of management.

Throughout 2016 and into early 2017, management personnel observed a trend of near miss patterns and incorporated a near miss tracking program into its hazard identification system. In addition to adding this reporting feature, corporate safety personnel sent out a standardized scripted near miss presentation, which was written in English, that management personnel were required to present to the employees. It is likely that ESL employees had a difficult time understanding the near miss presentation due to the English-only verbiage that was used. Thus, the occurrence of substandard post-training employee test results, lacking hazard identification skills, and serious near-hits indicates that Company XYZ ESL employees are at risk of incurring work-related injuries and / illnesses.

Purpose of the Study

The purpose of this study was to identify the potential safety training impediments that exist for Company XYZ's ESL workers.

Research Goals

The goals of this study were to:

1. Evaluate company training and testing materials for practices that meets the needs of non-English speakers.
2. Assess safety training surveying methods used to determine ESL workers' ability to identify hazards associated with their work processes.

Significance of the Problem

In June of 2010, the National Occupational Research Agenda and the National Institute for Occupational Safety and Health created a list of health and safety concerns in the manufacturing sector. One of the growing concerns that these two organizations identified were injuries and illnesses among immigrant workers in the manufacturing sector (CDC, 2010). This pressing issue of excessive illness and injuries among immigrant workers in manufacturing sub-sector warrants further research to help identify root causes and develop methods to aid in mitigating these losses (CDC, 2010). This is one of the reasons this research is significant as the researcher is attempting to identify and connect a potential a root cause between ESL workers and the occurrence of injuries within a manufacturing organization.

This study focuses on the Asian and Latino ESL workers who are classified as the understudied and vulnerable immigrant populations that are suffering from injuries and illnesses in the manufacturing sector. Currently, there have been a few articles published that state such communication gaps in safety programs exist for ESL workers to help mitigate injuries and fatalities for this group. Numerous published articles tend to focus solely at Hispanics injuries and fatalities in the construction industry. One of the important elements of this research paper will be to develop practices that will help bridge communication gaps that exist in safety training

for the Asian and Latino ESL population with the intent to mitigate injuries, illnesses and hazardous exposures.

Assumptions of the Study

The assumption of this study include:

- Employees and management personnel will answer the focus group interview questions honestly.

Limitations of the Study

The limitations of this study include:

1. Only Company XYZ's employees will be used for this research study and therefore the findings will likely not be generalizable to other organizations.
2. This study will focus on Asian and Latino ESL group, and thus the findings may not be the same with different language groups.
3. The researcher is not fluent in the Asian or Hispanic languages, thus lacks the ability to interpret questions and responses from the ESL focus group interview sections.
4. The interpreters' written log of employees' responses may not completely reflect what the respective employee's intended to convey.

Definition of Terms

The following is a list of defined terms used throughout this study:

English as a second language. English as taught to people whose main language is not English and who live in a country where English is an official or main language (Cambridge Dictionary, 2017).

Hazard. A condition, set of circumstances, or inherent property that can cause injury, illness or death (ANSI Z10, 2012, p. 3).

Risk. Combination of the probability of occurrence of harm and the severity of that harm (ANSI Z10, 2012, p. 3).

Risk assessment. Processes used to evaluate the level of risk associated with hazard and system exposures (ANSI Z10, 2012, p. 3).

Total recordable incident rate (TRIR). Total recordable incident rates are calculated using the OSHA standardized formula to measure injuries and illnesses within an organization (OSHA, 2016a).

Chapter II: Literature Review

The purpose of this study was to identify the potential safety training impediments that exist for Company XYZ's foreign-born ESL workers and to provide recommendations to improve its employees' education practices. The goals of this study were to evaluate Company XYZ's training and testing materials for practices that meets the needs of English as a second language workers and this groups ability to identify hazards through surveying methods used in safety training. Key components identified in this literature review include the historical content of foreign-born migration to the United States, statistical trends regarding non-native born workers in the United States labor force, gaps that exist in the workforce for workers born outside of the United States, a historical framework of the OSH Act, safety training components, and recent methods used to survey ESL workers' knowledge which was obtained from safety training. The researcher utilized scholarly articles, government agency databases, and established industry recognized standards to present the foundation of this literature review.

Foreign-Born Immigrants Migration to the United States

The organization that is responsible for tracking population-based demographics in the United States (U.S.) is the U.S. Census Bureau. The U.S. Census Bureau's first survey was conducted in the 18th century and released thereafter on a decennial basis (United States Census Bureau, 2017a). The earliest reporting on foreign-born migration in the U.S. Census survey dates back to 1850 (United States Census Bureau, 1999). Based on statistical data from the U.S. Census surveys, the immigrant population in America rose steadily in the 19th century from 2.2 million to 40 million foreign-born people in the 21st century (United States Census Bureau, 1999). Based on the foreign-born immigrant population increase data released in the U.S.

Census Bureau report, one could conclude that communication challenges would be more likely to occur in both in school as well as work settings.

The U.S. Census Bureau decennial survey became an integral part of increasing awareness of the U.S. population, but the demand for expanded socioeconomic and demographic information is pertinent for government and research purposes (United States Census Bureau, 2017b). Due to this increased demographic information demand and rapid changes in the United States, the U.S. Census Bureau developed and distributed another survey known as the American Community Survey (ACS). Unlike the decennial census report, the ACS is distributed in one-year, three-year, five-year, and ten-year increments and provides up-to-date statistics of the population (United States Census Bureau, 2017b). In 2006, the U.S. Census Bureau released its first ACS report that contained in depth demographic, socioeconomic, and housing information of the U.S. population from a survey that was conducted in 2005 (United States Census Bureau, 2017b). It is reasonable to conclude that the ACS survey is beneficial as it provides detailed information that specifically focuses on foreign-born immigrants. The ACS provides data on the number of foreign-born immigrants living in America, the number of non-native born people working in the U.S. labor force, and their English literacy levels.

One of the first subjects with statistical metrics listed in the ACS report is an estimate of the total number of people living within the United States. The U.S. population data is characterized by two categories of individuals who are either native or foreign-born (United States Census Bureau, n.d.b). In 2006, there were reported to be approximately 37.5 million foreign born immigrants living in the U.S., and that number expanded to 44.5 million immigrants as of 2017 (United States Census Bureau, n.d.b; United States Census Bureau, n.d.c). The ACS report indicated that in an 11-year period, the foreign-born immigrant population increased by

seven million people. The ACS survey, as does the decennial U.S. Census report displays an increase of foreign-born immigrants in the United States. Given the significant influx of foreign-born immigrants in the U.S., one could reasonably conclude that a major proportion of such individuals would enter the labor force and thus cause communication-based challenges in the work environment due to possessing minimal English-speaking skills.

Foreign-Born Migration into the United States Labor Force

The Bureau of Labor Statistics (BLS) is an organization that publishes pertinent data related to the United States labor force. The U.S. labor force reports, released by the BLS, relies on data extracted from the Current Population Surveys (CPS) that is distributed by the U.S. Bureau Census (BLS, n.d). Every year since 2003, the BLS releases a report that focuses on the labor force characteristics of foreign-born workers that exacts data collected from the CPS report (BLS, 2004). According to several labor characteristic of foreign-born workers reports from 2003 to 2017, the foreign-born population in the U.S. workforce increased from 14% to 17.1% (BLS, 2004; BLS 2018a). Of the 44.5 million foreign-born immigrants in the U.S. as of 2017, 62% of that population reported working in the United States labor force (BLS, 2018a). Given that more than half of the foreign-born individuals work in the U.S. labor force, one unsettling trend for these workers is the rising number of fatalities among this group in the United States workforce.

Foreign-born worker injury rates. The BLS releases a report every December which details the occurrence of occupational injuries in the U.S. for the prior calendar year. Per the National Census of Fatal Occupational Injury (NCFOI) chart reports from 2007 to 2016, the deaths of 970 foreign-born workers from occupational-related causes in 2016 surpassed the 959 deaths of similar individuals in 2007 (BLS 2007; BLS 2017c). Foreign-born workers in the U.S.

labor force experienced not less than 680 deaths per year over an eleven-year time span, as displayed in Figure 1 (BLS 2007; BLS 2017c). The graph not only displays a rising number of annual fatalities, but also provides evidence that the employers of foreign-born workers may not be providing such individuals with the necessary level of protection from workplace hazards and risks.



Figure 1. Fatal injuries involving foreign-born workers, by year (2017). Source: U.S. Bureau of Labor Statistics, 2007-2016.

Dangerous occupations. The BLS classifies a high-risk occupation based on the industry's fatality rate, which is expressed in terms of the number of fatalities per 100,000 workers (BLS, 2018b; OSHA, 2008). This fatality rate-based data is released in NCFOI report on an annual basis. For the calendar year 2016, the top three dangerous occupations with high fatality rates included agriculture (24.9), transportation (15.4), and construction (12.4) as displayed in Figure 2 (BLS, 2017d). Since 2007, the fatality rates within these top three industries have increased to the rates displayed in Figure 2, and thus exhibits an unsettling trend for employees who work in such professions (BLS, 2007).

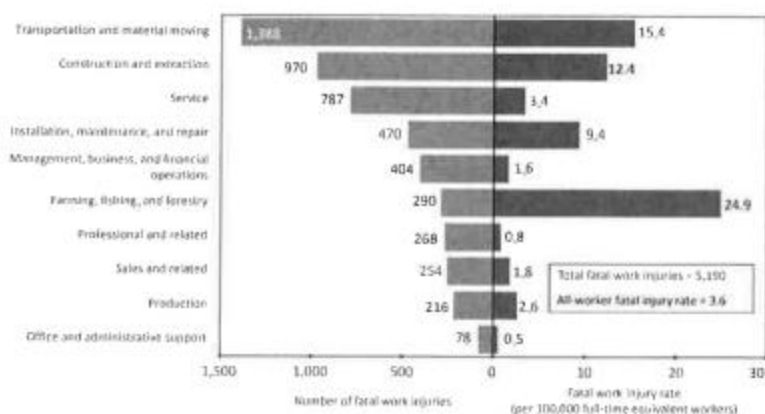


Figure 2. Number and rate of fatal occupational injuries to civilian works by major occupation group (2017). Source: U.S. Bureau of Labor Statistics, 2017.

From the data released in the 2006 and 2017, ACS reports that on average, 18% of foreign-born immigrants work in the agriculture, transportation, or construction industries as displayed in Figures 3 and 4 (United States Census Bureau, n.d.b; United States Census Bureau, n.d.c). Although at first glance, 18% may appear to be a low percentage of foreign-born employees who work in high risk occupations, that percentage encompasses 6.7 million people who accounted for 20% of the 5,190 fatalities in 2016 alone (BLS, 2017a). Figures 3 and 4 provide support that foreign-born individuals are working in high-risk occupations.

Subject	United States				
	Total		Native		Foreign born
	Estimate	Margin of Error	Estimate	Margin of Error	Estimate
Total population	325,719,178	*****	281,193,323	+/-135,763	44,525,855
INDUSTRY					
Agriculture, forestry, fishing and hunting, and mining	1.7%	+/-0.1	1.6%	+/-0.1	2.3%
Construction	6.6%	+/-0.1	6.0%	+/-0.1	9.6%
Transportation and warehousing, and utilities	5.4%	+/-0.1	5.3%	+/-0.1	5.8%

Figure 3. ACS 2006 report: Percentage of foreign-born workers by industry (n.d). Source: U.S. Census Bureau.

Subject	United States				
	Total		Native		Foreign born
	Estimate	Margin of Error	Estimate	Margin of Error	Estimate
Total population	299,398,485	*****	261,850,696	+/-125,641	37,547,789
Civilian employed population 16 years and over	141,501,434	+/-125,524	119,296,908	+/-138,560	22,204,526
INDUSTRY					
Agriculture, forestry, fishing and hunting, and mining	1.8%	+/-0.1	1.7%	+/-0.1	2.4%
Construction	7.9%	+/-0.1	7.2%	+/-0.1	11.6%

Figure 4. ACS 2017 report: Percentage of foreign-born workers by industry (n.d.). Source: U.S. Census.

Foreign-born worker fatalities by origin and ethnicity. Since 2003, the BLS tracks fatal injuries of foreign-born workers in the CFOI reports by the employees' country of origin and ethnicity. In 2016 alone, the combined Hispanic and Asian ethnic groups accounted for 56% of the 5,190 total work deaths among the foreign-born population (BLS, 2017a). Of the varying ethnic groups of foreign-born workers, the BLS has tracked foreign-born Hispanic/Latino workers fatal injuries in relation to native-born individuals of the same ethnicity since 2003. The Hispanic ethnic group is comprised of individuals from Mexico, the Caribbean, and South America (BLS, 2017c). In 2016, the foreign-born Hispanic/Latino population sustained 66% of the 879 fatalities of all Hispanic/Latino workers who were killed on the job (BLS, 2017c). From 2003 to 2016, the foreign-born Hispanic worker population deaths were nearly double than the native-born Hispanics as displayed in Figure 5 (BLS, 2017c). Native-born Hispanic deaths ranged from 237 to 323 deaths during the 13-year period from 2003 to 2016 whereas the foreign-born group ranged from 429 to 667 fatalities during the identical timeframe (BLS, 2017c). This data therefore demonstrates a gap which exists regarding the extent of work-related fatal injuries between foreign-born Hispanics and their native-born peers.

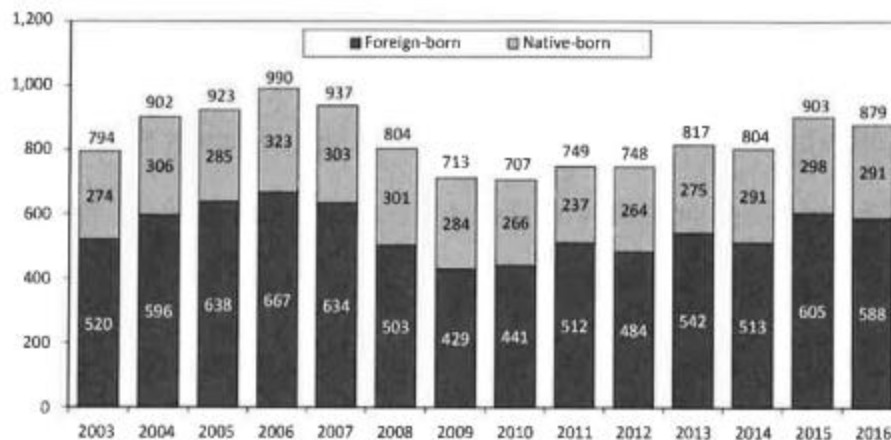


Figure 5. Fatal work injuries involving Hispanic or Latino workers 2003-16(2017). Source: U.S. Bureau of Labor Statistics, 2017.

Fatality Gaps in the United States Workforce for Foreign-Born Workers

The Centers for Disease Control (CDC) and the National Institute for Occupational Safety and Health (NIOSH) conducted an investigation on deaths in the U.S. from 1992 to 2006 in order to identify gaps that exist between the general U.S. workforce and Hispanic workers. According to the CDC, the factors that contribute to work-related injuries and deaths among Hispanic employees include their inability to comprehend safety training information, identify unsafe work conditions, and identify hazards due to language barriers (CDC, 2008). The theory of language barriers among this ethnic group is supported by the data in the annual American Community Survey report released by the United States Census Bureau. One of the questions posed to participants in the ACS survey is “What is the primary language spoken at home?” In the first ACS report in 2006, 84.4% of foreign-born immigrants who responded to this survey reported that they primarily spoke a language other than English in the home, and 52.4% of that entire population reported that they spoke English less than adequate (United States Census Bureau, n.d.b, n.d.c). From 2006 to 2017 on average, 84.3% of the foreign-born population spoke a different language at home, and 50.6% of the entire population reported themselves as

possessing low-literacy English levels and thus displaying no significant improvement in English proficiency since the 2006 report (United States Census Bureau, n.d.b; United States Census Bureau, n.d.c). This data displays a potential communication gap between foreign born and native-born people in the United States with regard to their inability to speak English fluently.

Although the United States is considered a melting pot in relation to language and other cultural beliefs, English is still the dominant language in the U.S. workforce. Fifty percent of the foreign-born population in 2016 maintained low literacy levels and the capability to speak the dominant U.S. English language (United States Census Bureau; n.d.a, United States Census Bureau, n.d.c). To bridge the language gaps in the workforce, the CDC (2008) suggested that organizations re-evaluate their Hispanic workers training programs through the use of available OSHA resources. The available resources were developed in order to satisfy the requirements and standard listed in the OSH Act and can be found on the OSHA webpage and in instruction manuals.

The Occupational Safety and Health Act

In 1970, President Nixon signed into law the Occupational Safety and Health Act (OSH Act) which was created as a result of U.S. workers that were experiencing significant illnesses and injuries on the job (OSHA, 2016a). Since the purpose of the OSH Act was to provide workers with safe working environments, the Occupational Safety and Health Administration (OSHA) subsequently created health and safety standards that companies are required to comply with to ensure that the workplace is reasonably free of hazards (OSHA, 2016a). While the workplace standards are typically focused on preventing substandard conditions, OSHA also outlines organizations' training requirements and provides additional resources to improve worker training programs. Various OSHA resources, tools, and regulations have been developed

which prompt employers to provide workplaces that are free of recognized hazards. OSHA also provides information on health and safety management systems, regulatory-mandated training requirements as well as on-site consultation programs for limited size organizations.

Safety and Health Achievement Recognition Program (SHARP). In 1982, OSHA founded the SHARP program to provide small organizations with consultation services that evaluate places of employment, health and safety programs and provide recommendations to mitigate workplace hazards (OSHA, n.d.a). In order to qualify for the SHARP program, organizations need an OSHA consultant to visit the worksite to perform a hazard assessment(OSHA, n.d.a). In addition, the company must mitigate all hazards that were identified by the consultant, maintain a low total recordable incident (TRIR) and days away restricted transferred (DART) rate in relation to the national industry average, and must have an effective safety and health management system in place (OSHA, n.d.a). The TRIR rate takes into account the number of recordable medical treatment incidents a company has and the amount of hours that all the employees worked (OSHA, n.d.c). DART is a human injury rate which is calculated based on the number of days away from work, restrictions or transfers that employees incur and the total hours that all employees worked (OSHA, n.d.c). A safety and health management system is a systematic approach that involves the development of a written manual which organizations use to identify and mitigate workplace hazards (OSHA, n.d.d). Organizations who obtain a SHARP status are recognized as possessing a workplace that provides a reasonable level of protection for the employees, develops an effective safety culture, and thus becomes exempt from compliance-based OSHA inspections unless there is a fatality (OSHA, n.d.a). One could conclude that as a part of providing worker protection, the

development of effective hazard training systems would also be a part of the organizations written manual and routine practices.

OSHA Safety and Health Management Guidelines. In 1998, OSHA developed the Safety and Health Management Guidelines to provide organizations with best practices which have been observed through the OSHA consultation programs and thus help strengthen companies' health and safety programming (OSHA, 2015a). The OSHA Safety and Health Management Guidelines are comprised of core elements that build upon each other to provide organizations with an effective system that is designed to help prevent workplace injuries, illnesses and fatalities (OSHA, 2015a). The six core elements include:

- Management leadership,
- Worker participation,
- Hazard identification and assessment,
- Hazard prevention and control,
- Education and training, and
- Program evaluation and improvements (OSHA, 2015a).

The management and leadership section focus on the commitment of top management personnel to ensure that a company provides a healthy and safe work environment for employees.

Management commitment involves establishing goals and objectives for the organization's safety program (OSHA, 2015a). Established goals and objectives should be relayed to employees during business meetings and training sessions in order to emphasize the company's commitment to providing a safe work environment. The worker participation core element prompts employees to become contributing members in health and safety programs and also bridge communication gaps, such as language barriers, that may exist in the workplace (OSHA,

2015a). The management leadership and worker participation core sections essentially create the foundation of the company's safety culture. In order for both groups to work together effectively, there should be a level of trust that exists between the two parties (Mahajan, Bishop, & Scott, 2012). It is important to note that trust does not occur instantly; it is to be earned over time (Gilboa, 2015).

The third and fourth OSHA Safety and Health Management Guideline core elements involve performing hazard identification/assessments and instituting prevention/controls (OSHA,2015a). Risk assessment is an evaluation method that an inspection team performs to evaluate hazards that any process or piece of machinery may possess (Main, 2004). The risk assessment process consists of the following three integral parts:

- Identifying any potential hazards present in the workplace
- Analyzing hazards and,
- Evaluating hazards to determine control methods to mitigate the hazards (Main, 2004).

Each company's risk assessment forms should be tailored to its specific operations and machinery (Main, 2004). For this process, it is preferred that management and employer work together to identify and mitigate workplace hazards by utilizing the risk assessment process. An employee's inability to identify hazards could result in injuries (OSHA, 2015b). Training is a vital function in which employees are provided with necessary knowledge/skills to identify hazards and thus prevent the occurrence of incidents (OSHA, 2015b).

The major component of the fifth OSHA Safety and Health Management Guideline core element involves worker education and training (OSHA, 2015a). Employers are required to provide safety training on worksite hazards to applicable employees (OSHA, 2014). Safety

training provides employees with the knowledge of hazard recognition and abatement methods so that the employees perform their work tasks safely(OSHA, 2014; OSHA 2015b). The safety training instructor may utilize tests to assess employees' understanding of the presented safety concepts and the ability to identify hazards (OSHA, 2015b). All of the training standards and requirements are listed on the OSHA webpage. In 2015, OSHA released the Training Requirements in OSHA Standards as a resource for employers and training personnel to reference with regard to the development of training programs (OSHA, 2015b).

The final OSHA Safety and Health Management Guideline core element involves evaluating and improving the organization's health and safety program (OSHA, 2015a). Health and safety professionals typically set performance goals which may be comprised of leading and lagging indicators. A leading indicator is a proactive approach in which a team identifies potential hazards before any injury or illness occurs, whereas a lagging indicator is a reactive approach in which worker-related losses are recorded and then investigated in order to determine what led to the injury (OSHA, 2016b). It is vital for the health and safety professional to identify and correct any deficiencies within its management system (OSHA, 2015a). Correcting the deficiency requires the health and safety professionals to re-evaluate all of the core components of the respective organizations' health and safety management system and thus could be considered to be a part of their general job description (OSHA, 2015a).

Safety Training Components

Safety training typically involves sessions in which a qualified trainer educates employees regarding potential and existing hazards that they may be exposed to in the workplace (OSHA, 2015a). In 2015, OSHA published the Training Requirements in OSHA Standards which identifies three times in which safety training is required to be performed. The three times

that OSHA requires training include initial, annual, and refresher training (OSHA, 2015b). Initial safety training is used to provide the employee with the knowledge of potential hazards that exist in the workplace as well as the safety measures to mitigate the risk of injury before the individuals initiate their job duties (Canadian Centre for Occupational Health and Safety, 2017). In addition to the initial safety training, OSHA requires that employers provide annual training for 23 of its standards (OSHA, 2014). The employer is required to conduct annual training only on the standards that are applicable to the processes within its facility (OSHA, 2015b). Common annual training topics among organizations include bloodborne pathogens, emergency evacuation/preparedness, hazard communication, and lockout tagout. (OSHA, 2015b). Refresher safety training is required when there are procedural or equipment changes or if an employee is demonstrating substandard acts or conditions (OSHA, 2015b). It is the employer's responsibility to ensure that the established safety training follows the requirements established by OSHA standards (OSHA, n.d.b).

OSHA training requirements. OSHA training requirements are listed under each health and safety standard on the OSHA webpage and are also referenced in the Training Requirements in OSHA Standards. In 2015, OSHA released this training requirement manual as a resource for organizations to utilize when establishing training programs. The OSHA standards are organized in this manual numerically by industry identifier code and are subsequently split into the five industry sections (OSHA, 2015b). The Training Requirements in OSHA Standards manual provides the type of training which is required by the various health and safety standards. The Training Requirements in OSHA Standards manual could be viewed as a valuable asset that organizations can use to construct the training programs into a matrix which outlines the programs that need to be taught to the appropriate employees.

One of OSHA's main requirements in a worker education program is for an employer to provide adequate or effective training to the respective employees (OSHA, 2015b). Two training definitions Training Requirements in OSHA Standards manual was flawed because up until 2010, the term "adequate or effective training", were not clearly defined, and thus left room for employers and management personnel to interpret what the term means. What may be effective or adequate training to a manager may not be sufficient for a foreign-born worker with language barriers. The Assistant Secretary of the United States Department of Labor, David Michaels (2010), addressed the broad terminology of adequate or effective training in an OSHA Training Standards Policy Statement memo by stating "that training must be presented in a manner that the employees understand" (p.2). For 40 years, the standard terminology was vague as it did not address language barriers and communication gaps that may exist for ESL workers safety training. In 2010, there was a total of 774 foreign-born worker deaths in the United States, and that annual number steadily increased to 970 deaths in 2016 (BLS, 2017c). Even with David Michaels (2010) clarification of the terms "adequate and effective training", there may still be a deficiency in the overall quality of safety training programs for foreign-born workers.

Recent Methods used to Survey ESL Workers Safety Training Knowledge

It appears as though a limited number of studies have been conducted to assess organizational safety training programs for foreign-born workers. One study performed by the Burlow Group Inc. (2005) focused on understanding the English proficiency needs of foreign-born Hispanic workers in the U.S. labor force. The two major objectives of the Burlow Group Inc. study included:

- Evaluate the level of English literacy levels that employers require from Hispanic employees

- Evaluate training programs for foreign-born Hispanic workers (2005).

The researchers utilized qualitative data collection techniques for this study by interviewing the participants at roundtable sessions, focus groups, and through a web-based survey (Burlow Group, 2005). The roundtable and focus group methods allowed for the subjects to express their thoughts and feelings based on open-ended responses which were asked by the researcher. The research team developed two lists of questions where one was used for the roundtable table sessions and the other was utilized during the focus group sessions. The Burlow Group Inc. research included 161 employee-based participants from the manufacturing, transportation, health care, information technology, construction, hospitality, biotechnology, and energy industries (Burlow Group, 2005). Thirty-seven percent of the employers participated in the focus group and round table discussion, while the remaining 63% answered the identical questions on a web-based survey (Burlow Group, 2005). Roundtable participants consisted of Employers from the Workforce Development Network (EDWN) in Wisconsin and the Texas Manufacturing Assistance Centers (TMAC). The focus group participants consisted of employers from the top five cities with the highest populations of Hispanic workers and included Chicago, Dallas, Houston, Milwaukee and Irvine, California (Burlow Group, 2005).

For the Burlow Group Inc. (2005) research, roundtable questions involved recruitment and retainment processes of ESL workers and were asked to the EDWN and TMAC management teams (Burlow Group, 2005). The roundtable questions included:

- What language requirements are necessary to be hired by your organization?
- What methods and programs do your organization have in place to help English as second language employees improve their language and occupational skills (2005)?

Multiple employers participated in the roundtable sessions and thus were not identified by organization. Employers within the TMAC organization were the only group that discussed recruitment processes. Organizations within TMAC used monster.com and temporary agencies to recruit its employees (Burlow Group, 2005). Employers within the EWDN roundtable group, addressed the second research question and reported that English language classes are provided for employees who express interest during the recruitment process, although there is not a system in place to assess employee English literacy levels (Burlow Group, 2005). To retain the ESL Hispanic workers, certain organizations provided translators during the employee training sessions. Of the eight employers who participated in the TMAC roundtable session, two participants provided insight on their company's language training program to recruit and retain the ESL employees (Burlow Group, 2005). One employer indicated that its pilot language training program used bi-lingual college students to train the company's ESL Hispanic workers. Another employer indicated that it provides employees with the option to attend English courses at a community college (Burlow Group, 2005). The fore-mentioned research indicates that certain companies provide language-based training to recruit and retain foreign-born ESL Hispanic employees, however, the limitation in this study was its inability to determine if the English training sessions for foreign-born workers proved to be effective.

For the Burlow Group (2005) research, subjects in the focus groups were asked what employers perceive as necessary for ESL Hispanic workers to succeed and what type of training tools were being offered for ESL Hispanics. All five focus groups mentioned that ESL Hispanic workers needed to be proficient in English in order to succeed in the workforce (Burlow Group, 2005). Several employers who participated in focus group sessions reported that language training was not provided to the respective employees. A majority of employers who conducted

hazard related in-house training reported that the corresponding training materials were language free and comprised of photos (Burlow Group, 2005). Overall, the surveyed employers reported that there were scarce resources and tools available to aid in developing multi-language safety training materials for ESL Hispanics (Burlow Group, 2005). Based on the aforementioned research, it is apparent that employers would agree that English proficiency is needed from its employees, and that training materials within the workplace should be improved to meet the language needs of its ESL Hispanic populations.

While the Burlow Group Inc study focused on management's perception of training needs for its English as second language employees, research by Canales et. al (2009) focused on ESL workers and native-born supervisors' safety training needs. The Canales et. al (2009) study surveyed 38 English speaking American supervisors and 97 Hispanic workers from 10 construction sites located throughout the state of Iowa to determine the training needs for both groups. The researchers distributed a needs analysis survey to both groups using face-to-face interviews. The need analysis survey for both groups were comprised of the following sections and questions:

Personal background information

- How long have you lived in the United States?
- Do you plan on living in the United States permanently?
- How many years of experience do you have working in the construction industry (Caneles et.al, 2009)?

Communication skills and language capabilities (English versus Spanish),

- Are you satisfied with your ability to communicate on the job-site?
- Have you taken courses to help you learn English/Spanish?

- Would you like to take a course to help you learn English/Spanish?
- Would you like to be trained in English/Spanish?
- Safety and cultural awareness
- What is the major problem on the job-site between employees and supervisors?
- Can you describe any nonlanguage cultural differences between Hispanic workers and American supervisors? (Canales et al., 2009).

The fourth section of the questionnaire for the ESL group focused on to the employees' understanding of safety aspects, whereas the fourth section for the English-speaking supervisors focused on the instructors' training background (Canales et al., 2009). The personal information section focused on the amount of time that both groups worked in the construction field. Over half of the Hispanic participants who participated in this study indicated that they had limited experience (i.e. one year or less) in working in the construction industry, whereas the supervisors had typically accumulated several years of experience in this field (Canales et al., 2009). Sixty-one out of the ninety-eight Hispanic participants expressed that they had substandard English-speaking abilities. Thirty-one out of thirty-eight supervisors indicated their inability to speak Spanish (Canales et al., 2009). Both of the surveyed groups agreed that the lack of communication and language barriers contributes to deficiencies in an organization's cultural awareness and safety training programs (Canales et al., 2009).

After the ESL employees and English-speaking supervisors' needs were assessed, the researchers developed training courses in an attempt to bridge the communication gaps and language barriers between the two surveyed groups. The researchers developed two language-training courses (one for the English-speaking supervisors and the other for the Hispanic workers) based on the English and Spanish speaking deficiencies which were identified from the

needs assessments (Canales et al., 2009). The English-speaking supervisors received a Spanish based course whereas the ESL workers received an English communication course (Canales et al., 2009). Canales et al. (2009) constructed a list of commonly used construction words like wheelbarrow, crane, bucket, and power buggy and placed such in short English and Spanish phrases along with pictograms for each word. The trainer also read each statement out aloud in both languages to each group. The training for each group were repeated several times. During the final training course, the researcher opened up the floor for ESL individuals to express their cultural differences. One common perception that the ESL participants shared was that in their culture, they could not speak up or out to anyone who is classified as supervisor because the person was deemed as a powerful person (Canales et al., 2009). Thus, this perception indicates a communication barrier for the Hispanic workers which prevented the group from asking questions to their supervisors during their company training sessions. Once all the training course sessions were completed, the supervisors and ESL workers were asked to fill out two evaluation forms. The first evaluation form was distributed to participants after the last course was completed and the second evaluation form was provided to all participants two months after they completed the first form (Canales et al., 2009). The evaluation forms were used to assess the effectiveness of the Spanish and English training courses and materials (Canales et al., 2009).

The post-training questions that were asked of the supervisors and Hispanic workers included:

- Has the ESL or supervisor course been useful (Y/N)?
- I feel that my confidence has improved since taking the course (Y/N).
- I think the workbook was appropriate for the training (Y/N).
- I think the activities were useful (Y/N) (Canales et al., 2009).

The researchers used a paired t-test to assess the statistical significance of the means from the participants responses between the two ESL evaluations (Canales et al., 2009). The means were measured using scale from 1 to 7, with 1 being least favorable and 7 being ranked as the most favorable result (Canales et al., 2009). All of the ESL participants' responses to the initial post-training evaluation survey averaged out to 6.8, which indicated that the course was useful, participants confidence levels improved, and the workbooks and activities were useful (Canales et al., 2009). During the second follow up evaluation survey, the average of the participants' responses ranged between 5.8 and 6.8 and thus displayed that some of the knowledge they retained slightly diminished, however, the ESL participants felt that the course and materials were still considered to be effective if the program was maintained (Canales et al., 2009). Similarly, to the ESL responses, 100% of the supervisors felt that the course content, materials, and activities were useful (Canales et al., 2009). Fifty percent of the supervisors believed that their Spanish speaking abilities improved after taking the course (Canales et al., 2009). Considering that the supervisors completed the course four times and that half of the group retained a certain amount of Spanish verbiage, this study indicated that training such as the type designed in this study could help bridge communication gaps and language barriers between supervisors and ESL workers. Overall, the English-speaking supervisors and the ESL construction workers indicated that the training courses, materials, and activities were effective and improved their second language skills (Canales et al., 2009). One could conclude from the Canales et al. study that Hispanic workers are reluctant to speak up about potential workplace hazards and employers should specifically tell Hispanic workers that it's acceptable to raise safety concerns to their supervisors. This study indicated the need for management to teach

supervisors foreign language terms and that ESL employees should be taught English-based process/hazard terminology.

Similar to the Canales et al. (2009) study, Wakefield and Mineke (2011) conducted a study to assess trainers' perception of their organization's training materials to determine if language barriers existed between occupational hearing conservation trainers and ESL employees. The researchers used a survey that was comprised of questions tailored to identify the trainers' communication skills and competence levels to train ESL workers (Wakefield & Mineke, 2011). The questions in the occupational hearing conservation trainer survey included:

- What language(s) are the training materials written and presented in?
- Does your company provide an on-site translator?
- As a trainer, are you fluent in any other language than English (Wakefield & Mineke, 2011)?

The survey was mailed out to individuals who were certified by the Council for Accreditation in Occupational Hearing Conservation in the states of Arkansas, Connecticut and Wyoming (Wakefield & Mineke, 2011). A total of 161 subjects who were primarily Caucasian females participated in the study (Wakefield & Mineke, 2011). Out of the 300 subjects that participated in this study, 279 individuals indicated that they did not read, write, speak or understand the Spanish language which was similar to what the American supervisors reported in the Canales et al. study (Wakefield & Mineke, 2011; Canales et al., 2009). From the communication portion of the survey, all of the participants indicated that the training materials and videos were delivered using the English language and 75% of the participants indicated that their organization did not provide an on-site interpreter during safety training activities to translate the materials for ESL employees (Wakefield & Mineke, 2011). A majority of the

hearing training programs were presented using English-based verbal instructions based on the trainers' language capabilities (Wakefield & Mineke, 2011). The data from this study indicated that language barriers likely existed in hearing conservation training approaches for ESL workers. One could therefore conclude that if language-related barriers existed for the surveyed hearing conservation training programs, then there is a potential that communication-related issues exist in other safety training programs.

In regard to the safety training evaluation and worker-based knowledge focus of this paper, research was conducted to study ESL workers' ability to retain knowledge related to the employees' work task. Adams, Ahola, Chahine, and Muniz (2016) conducted a study to evaluate Spanish workers' ability to retain knowledge from a Beef Quality Assurance (BQA) training. A total of 28 ESL Spanish-speaking subjects from six dairy farms which are located in Idaho and Colorado participated in this study (Adams et al., 2016). The surveyed individuals' knowledge on BQA varied as certain companies provided employees with BQA training while other organizations did not provide such training (Adams et al., 2016). The researchers utilized an exam questionnaire comprised of 12 knowledge-based questions which were written in Spanish related to the BQA training course as the data collection instrument (Adams et al., 2016). The average pre-test training score for the surveyed participants was 54.4%, which is below the passing threshold of 70% for OSHA training test scores (Adams et al., 2016; OSHA, 2011). Based on substandard pre-test scores, the researchers developed a Spanish based BQA course and presented such to the ESL surveyed participants. The ESL group that completed the BQA Spanish-based training course then completed a post-test. The post-test questions were written in English and translated to Spanish for the ESL individuals. The average of the post-test scores increased by 21%, thus raising the score to 75.4% which was above the passing threshold

following the Spanish-based training course (Adams et al., 2016). The results from the tests indicated that participants from both groups performed higher on the post-test than the pre-test. Adams et. al (2016) mentioned that the Spanish language-based training helped improve ESL workers' proficiency of the training concepts from the BQA training, however the group did not provide any information on the participants' employers' training program (whether the materials were written in English or Spanish) and the methods to assess the pre-test scores. One could infer from this study that a contributing factor of the substandard pre-test scores is that the employers did not provide adequate training to the respective employees in a language that they understood. One could also conclude that the 21% increase post-test scores for both groups indicate that the participants understood the researchers training and training since such were presented in the employees' native language (Adams et al., 2016).

Another research project was conducted to study the effects of three different types of training methods to determine which method met the needs of the English as second language employees. In 2014, Wilkens, Chen, and Jenkins conducted a study to evaluate subjects' ability to understand six health and safety hazard-training concepts, although the researchers did not include the study's test questions. The six health and safety hazard training topics of this study included:

- Introduction to OSHA
- Fall Protection hazards
- Electrical hazards
- Struck by hazards
- Caught in hazards
- Use of personal protective equipment (PPE) (Wilkens, Chen, & Jenkins, 2014).

The hypothesis of the study stated that foreign-born workers would have the highest post-test score if the hazard recognition training was conducted in the individual's native language (Wilkens et al., 2014). Wilkens' et al study used a static group comparison model and was comprised of 621 subjects that were randomly placed in control or treatment groups (Wilkens et al., 2014). The control group participated in an English-only safety training session. Participants placed in the treatment groups were either trained in Spanish-only or were trained using both English and Spanish languages, which is often referred to as a translanguaging technique (Wilkens et al., 2014). The Analysis of Covariance (ANCOVA) model was used to distinguish if a variable has an impact between the control group and treatment groups (Northern Arizona University, n.d). In the Wilkens et al. study, the independent variable (language used in the training sessions) was changed for the treatment groups but remained unchanged for the control group (Wilkens et al., 2014). The researchers were able to evaluate if the changed independent variable impacted the post-test scores based on the language used during the training. The results from Wilkens et al. 2014 study indicated that the subjects in the translanguaging group obtained the highest average post training test scores (70.2%) when compared to the English-only (50.6%) and the Spanish-only (61.8%) instruction-based groups (Wilkens et al., 2014). According to this study, the English-only control group failed the post-test, and the Spanish only group performed 11.8% higher on the post training test scores than the English-only group. The results provide evidence that English-only hazard recognition instruction is not effective for foreign-born employees. Contrary to the Wilkens et al. study hypothesis, teaching the employees in their native language did not yield the highest test scores. Thus, the Wilkens et al. (2014) study indicates that foreign-born Hispanic workers are likely to retain a higher level of hazard information when the training is performed using a multilingual approach, and that the English-

only instructional approach may be the least effective approach to teach Hispanic workers on the correct means to identify hazards in the workplace.

Summary

As foreign-born migration continues to increase in the United States, there also continues to be an increase for this group to enter the U.S. Labor force. Unfortunately, in 2016 alone, the foreign-born group experience 20% of the 5,190 total fatalities in the U.S. workforce (OSHA, 2017a). In 2005, employers deemed that foreign-born workers need to be proficient in English in-order to succeed in the workforce. On the language portion of the American Community Survey, foreign-born immigrants expressed that they possessed low English-speaking abilities and literacy levels (United States Census Bureau, n.d.b; United States Census Bureau, n.d.c). The foreign-born immigrant responses on the ACS report suggest that potential communication gaps exist in the workforce for foreign-born worker's ability considering that most organization require its employees to be proficient in English as indicated in the Burlow Group research. However, in an OSHA interpretation letter that was released in 2010, OSHA training guidelines indicate that it is the employer's responsibility to train employee in a language that they understand (Michaels, 2010). The Burlow Group, Canales et al., and Wakefield and Mineke research studies revealed that certain company's training program materials consist of photos, videotapes as well as verbal instruction presented by English-speaking trainers. Effective safety training for foreign-born workers is vital for this groups' safety, and the failing test-scores in the Wilkens et al. and Adams et al. studies demonstrate the adverse effects of training employees' in a language that they don't understand. If an employer uses a multilingual ESL employee training approach, then foreign-born workers are likely to retain a higher level of hazard recognition information and therefore understand workplace hazard components. If an employee does not

understand an organizations' safety training concepts, this could result in a foreign-born worker becoming injured on the job. Adams et al study also shed light on cultural issues of Hispanic workers not challenging supervisors. Based on the aforementioned studies, it would be prudent to conduct a focus group session with the foreign-born employees at Company XYZ to identify any potential safety training impediments that exist in the organizations' safety-training program. Based on the proceeding literature review, there appears to be various questions from the research studies that beneficial in the construction of the survey method for this research study. The American Community Survey questions will help determine the English literacy of employees. The Burlow Group study focused on the retainment and recruitment process of ESL employees within the different companies. The Canales et al. ESL focused on cultural barrier impediments that exist in safety training programs and the Occupational Hearing Conservation and Canales et al. research questions tailored around construction and delivery methods of the training materials. Components from each of the identified studies could be utilized in the focus group interviews in order to assess an organizations ESL-related training program.

Chapter III: Methodology

The purpose of this study was to identify the potential safety training impediments that exist for Company XYZ's foreign-born ESL workers and to provide recommendations to improve its employees' education practices. The goals of this study were as follows:

1. Evaluate company training and testing materials for language that meets the needs of non-English speakers, both in communicating and assessing content.
2. Assess safety training surveying methods used to determine ESL workers' ability to identify hazards associated with their work processes.

This chapter reviews the subject selection and description, instrumentation, data collection procedures, data analysis, and limitations towards the study to achieve the intended goals.

Subject Selection and Description

The participants from this study were employees from one manufacturing company located in the state of Illinois. The subjects for this study included the health and safety manager, supervisors, and English as a second language employees at Company XYZ. The ESL participants were comprised of Asian and Hispanic/Latino male and female workers. Management personnel consisted of Caucasian and Latino males. This core group of individuals was selected because they are involved in Company XYZ's safety training program.

Instrumentation

The researcher conducted two focus groups sessions for this qualitative study. One focus group session was comprised of ESL employees and the second group was comprised of management personnel. This focus group interview sampling method was selected because it would allow participants of varying English proficiency capabilities to verbally express their perceptions of the effectiveness of Company XYZ's training sessions materials based on their

experiences. Two sets of interview questions were developed for this study; one for the management team comprised of the safety manager and the supervisors and the other for the ESL employees. Interview questions and training concepts were gathered from the American Community Survey, Burlow Group Inc., Canales et. al, Wilkens' et al, Adams et al, Occupational Hearing Conservationist research studies. The goal of the interview questions was to provide data necessary to identify safety training impediments that exist for ESL workers and thus develop strategies to bridge communication gaps between the ESL employees and management personnel. The interview questions for the management team is arranged into four parts related to the employer's recruitment process, perceptions of Company XYZ training materials, the trainer's language skillset, and ESL workers contributions in the company's hazard identification program. The interview questions for the ESL participants was arranged into four parts related to the employees' background, English capabilities, perceptions of Company XYZ training materials, and the employees hazard identification abilities. The list of interview questions for each focus group can be found in Appendix A and Appendix B.

Data Collection Procedures

The researcher developed a flyer to recruit ESL employees at Company XYZ for this study (see Appendix E). The health and safety manager agreed to display the recruitment advertisements and the ESL employees were able to contact the researcher through email to express their interest in participating in the study. The researcher met with the participants in a secured conference room located in Company XYZ. The data collection for this qualitative study began with the researcher reviewing the description of the study, time commitment, the risk and the benefits of the study with the participants who expressed interest in the study. The researcher reminded the participants that the study was completely voluntary and that they were

able to withdraw from the study at any given time with no repercussions. Two bilingual employees volunteered to translate the information that was presented in English to the ESL employees for the focus group sessions. Prior to the employee interview process, the two interpreters were provided with the confidentiality form which they read and signed (see Appendix C). Consent forms that detailed the information and IRB approval were passed out to the participants to voluntarily sign (see Appendix D).

Data collection for the ESL workers and management personnel focus groups consisted of face-to-face interviews. Two bilingual production employees volunteered to serve as translators for the ESL focus group while the management group did not need translators. One employee translator is fluent in English and Spanish, and the other is fluent in several Asian languages.

The researcher assigned numbers the participants so that they remained anonymous. After each participant received his/her assigned number, the researcher initiated the study by reading each question aloud in English, then the translators repeated the questions in the employee's native language. After each question was read aloud and translated, the researcher allotted time to the participants to respond to the questions. Both the researcher and translators wrote down the employee responses in a notepad which identified each subject by his/her assigned number. At the end of the formal questioning session, the researcher provided participants with the opportunity to recommend the ways to improve Company XYZ's safety training program for ESL employees. The consent forms and the results from the focus group session were securely stored in the researcher's briefcase. A lock was placed on the briefcase to secure the documents.

Data Analysis

The data from each focus group interview session was transcribed into tables and pie graphs which are presented in Chapter IV. The instrumentation used in this study was comprised of 20-25 questions, which consisted of yes, no, and open-ended responses. The yes and no responses are commonly understood among all languages and determined if the interview questions were accurate. The open-ended responses provided participants with the opportunity to express their own thoughts and perceptions on the statements that were asked.

The data from the ESL personal background, ESL English capabilities, and the management trainer's skillset sections were taken and constructed into several pie-charts based on the percentage of participants' responses to the questions and listed in the demographic section. The data from Company's XYZ training materials sections were organized into three separate tables based on management and ESL participants' responses organized under the first goal in the item analysis section. The data from Company's XYZ hazard identification section was organized into four separate tables based on management and ESL participants' responses under the second goal in the item analysis section. The last two tables in the item analysis section, displayed the ESL participants' ability to identify hazard terms using yes or no responses after being presented with written hazard terms first in English then in the employees' native language with visual displays. The results from this study are discussed in Chapter IV.

Limitations

The limitations of this study were:

1. Only Company XYZ's employees will be used for this research study and therefore the findings will likely not be generalizable to other organizations.

2. This study will focus on Asian and Latino ESL group, and thus the findings may not be the same with different language groups.
3. The researcher is not fluent in the Asian or Hispanic languages, thus lacks the ability to interpret questions and responses from the ESL focus group interview sections.
4. The interpreters' written log of employees' responses may not reflect what the employee intended to convey.

Assumptions

Assume that employees and management personnel answer the focus group interview questions honestly.

Chapter IV: Results

The purpose of this study was to identify the potential safety training impediments that exist for Company XYZ's foreign-born ESL workers and to provide recommendations to improve its employees' education practices. The goals of this study are as follows:

1. Evaluate Company XYZ's training and testing materials for language that meets the needs of non-English speakers, both in communicating and assessing content.
2. Assess safety training surveying methods used to determine ESL workers' ability to identify hazards associated with their work processes.

A management focus group questionnaire consisted of 22 questions that were separated into four categories recruitment process, Company XYZ's training materials, trainer's language skillset, and hazard identification program. The ESL focus group questionnaire consisted of 20 questions that were separated into four categories which included personal background, English capabilities, Company XYZ training, and hazard identification. In March of 2019 the researcher met with the management personnel and ESL participants separately in a conference room at Company XYZ. A total of 15 employees at Company XYZ participated in this study. The remainder of this chapter reviews the results from the Chapter III methodology which included demographic and item analysis towards the study to achieve the intended goals.

Demographic Information

Focus group responses were gathered from ESL employees and management personnel at Company XYZ in which personnel background (Appendix B), recruitment methods (Appendix A), English capabilities (Appendix B), and trainer's language skillset (Appendix A) questions helped develop the foundation for the demographic section.

ESL personal background focus group analysis. The open-ended personal background questions consisted of identifying the participants ethnicity/race, how long they have lived in the United States, and how long they have worked in a manufacturing setting (Appendix B). The participant pool consisted of Asian, Hispanic, Caucasian and African American male and female employees in a manufacturing setting as displayed in Figure 6.

- Forty-six percent of the focus group participants were Asian, 40% were Hispanic, 7% Caucasian and 7% were African American.

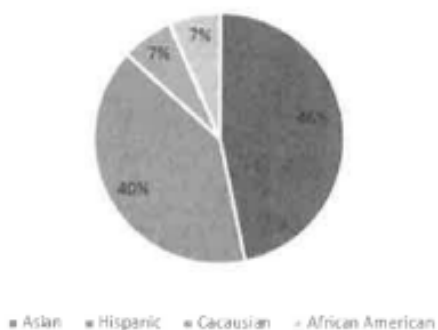


Figure 6. Personal background: Focus group ethnic classification at Company XYZ.

All of the management participants in the focus group study have lived in the United States their entire lives. Eighty-two percent of Asian and Hispanic ESL participants have lived in the U.S. from 1-15 years and 18% have lived in the U.S. for over 20 years.

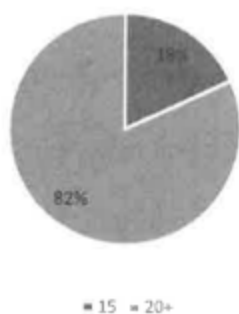


Figure 7. Personal background: number of years ESL employees at Company XYZ has lived in the United States.

- Fifty-five percent of Hispanic and Asian ESL employees have worked in a manufacturing industry for over 20 years.

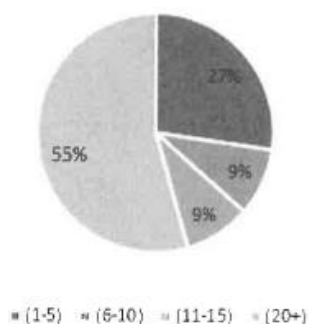


Figure 8. Personal background: Number of years ESL employees has worked in a manufacturing industry.

Results for the ESL recruitment process data collection at Company XYZ. The first portion of the management-based focus group questions consisted of identifying resources that Company XYZ'S used in its recruitment process for ESL employees and language requirements for employees. Based on the management's response to question 1 in Table 1, Company XYZ hires ESL employees based on word of mouth. Per question 2 in Table 1, the ESL ethnic groups that work at Company XYZ include Vietnamese, Chinese, Taiwanese, Mexican and Puerto Rican. All employees at Company XYZ are required to read, write, and comprehend English in

ordered to be hired, however, the company has made exceptions for employees who could not meet the English literacy requirements as long as there was another bilingual employee worked the same shift who could serve as translator. One management participant expressed that years ago, Company XYZ used to utilize a city-funded on-site program that would teach ESL employees English, but the program did not sustain and management personal believed it was ineffective. The results from the recruitment-based focus group questions are listed in Table 1.

Table 1

Management Responses to ESL Recruitment

Categories	Questions	Responses
Recruitment Process	1. How do you find ESL work applicants?	Our main path of hiring generally begins through word of mouth with our current personnel in the factory.
	2. What ethnic groups contribute to your ESL workers within your company?	Our factory consists of many ethnic groups ranging across the globe. There many dialects within these language groups which poses additional obstacles. This has become a major challenge in maintaining consistency in our daily operations. Ethnic groups consist of Vietnamese, Chinese, Taiwanese, Mexican, and Puerto Ricans.
	3. What language requirements are required to be hired by your organization?	English is the language requirement in our organization.
	4. How is language proficiency assessed for your workers?	The employment application consists of a series of tests. One of these tests include a reading comprehension section which measures the applicant's ability to proficiently read and understand the English language.

5. Have you ever made exceptions for employees who did not pass the language proficiency criteria? If so, why and what method did you utilize to ensure that the employee can understand safety policies, procedures, and training requirements?

All employees must be able to speak, read, and understand the English language. There are however varying degrees of each individual's understanding. In certain situations, a hands-on demonstration may be necessary to ensure that the employee fully understands the work/task-related instruction.

There have been cases where one or two employees who have not been able to read/write/ comprehend English have been hired based on their experience working in a similar manufacturing industry and was capable of communicating in their native language with another plant employee/supervisor.

6. Have you used publicly funded entities such as one stop centers, job centers, the Employment Service and technical schools in the recruitment process?

Many years ago, we agreed to have a city-funded group come to perform an after-work program to help those employees struggling in the English language. It was well received at first but quickly the program dwindled in intensity and eventually lost its momentum. Honestly, I really feel the program was not all that effective in their training program.

ESL English capabilities results. The English capabilities questions consisted of identifying the participants native language (Figure 9), identifying work related tasks that require participants to read and comprehend English (Figure 10), identifying courses that employees participated in to help them learn English (Figure 10), if ESL employees were satisfied with their ability to communicate with other employees and management at work (Figure 11), and whether there were communication problems between management and ESL employees at the jobsite (Figure 12).

The results for question 1 in the English capabilities section (Appendix B), for ESL participant's first language (Figure 9) indicated that 42% of the ESL focus group participants reported that their first language was Spanish, 33% Vietnamese, and 25% Mandarin.

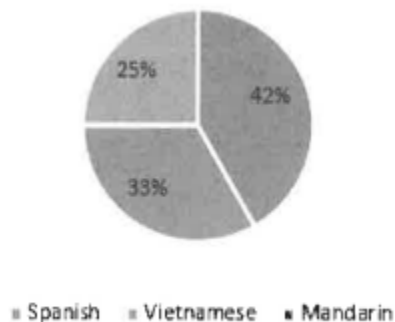


Figure 9. English capabilities: ESL employees first language.

The results for question 2 in the English capabilities section (Appendix B), if ESL employees have taken courses to help them learn English (Figure 10) indicated that 42% of focus group participants reported that they took an English-based course, whereas 58% responded that they have not.

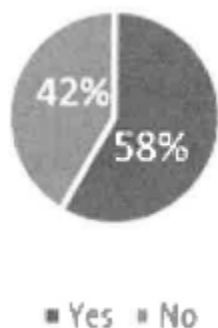


Figure 10. English capabilities: English course inquiry.

The results for question 3 in the English capabilities section (Appendix B), if ESL employees were satisfied with their ability to communicate with peers and management (Figure

11) indicated that 67% of the ESL focus group participants reported that satisfied with their ability to communicate with their peers and management, whereas 33% responded that they were not.

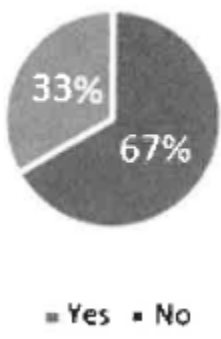


Figure 11. English capabilities: ESL participants perception of communication between peers and management.

The results for question 4 in the English capabilities section (Appendix B), are there communication problems between management and ESL employees on the job-site (Figure 12) indicated that 58% of the ESL focus group participants reported that there were communication barriers between management and ESL employees on the job-site.



Figure 12. English capabilities: ESL participants perception of communication between peers and management.

Management trainer’s language skillset focus group analysis. The trainer’s language skillset questions consisted of identifying trainers working knowledge of other languages and if the supervisors/managers would be interested in taking courses to learn other languages (Appendix A).

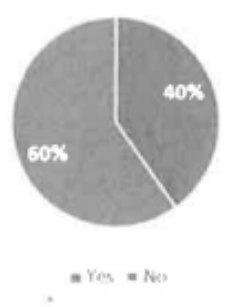


Figure 13. Trainer’s language skillset.

The focus group management participants reported that 60% of their training staff at Company XYZ did not know another language besides English and that 40% percent of the training staff knew Spanish-only as displayed in Figure 13. All of the management participants indicated that they would be interested in taking a course to learn other languages as displayed in Figure 14.



Figure 14. Trainer’s skillset: Trainer’s interest in taking a course to learn other languages.

Item Analysis

This section focuses on the results from the focus group questionnaire for management personnel and ESL participants (Appendix A and Appendix B) responses from 15 employees at Company XYZ. The first research goal focused on an evaluation of Company XYZ training and testing materials for language that meets the needs of non-English speakers, both in communicating and assessing content. Goal 1 was divided into two sections and included the management-based focus group responses (Goal 1.A) and ESL participants' responses (Goal 1.B). The second research goal consisted of assessing safety training surveying methods used to determine ESL workers' ability to identify hazards associated with their work processes. Goal 2 divided into two sections which included the management-based responses (Goal 2.A) and ESL based-responses (Goal 2.B).

Goal 1.A Management Focus group responses of Company XYZ's training course materials for ESL employees. The researchers asked the management focus group nine questions to assess Company XYZ's training program. The participants responses to all nine questions are listed in Table 2.

Table 2

Management Personnel Focus Group Interview Responses for Company XYZ Training Program

Categories	Questions	Responses
Company XYZ training program	1. Can you describe your safety-training program? What does a typical safety training consist of?	<p>The EHS program is a 5-hour training period including all of the OSHA mandated training and additional topics. This includes the following.</p> <p>Emergency Response and Evacuation Hazard Communication Lockout / Tagout Bloodborne Pathogens Voluntary Respirator Training Forklift Pedestrian Training Slips and Falls Forklift Training (depending on the position – note additional 4 hours)</p> <p>The training sessions are performed through power point slides, handouts, and videos. In addition, many of the trainings include a quiz to verify competency.</p> <p>Our safety training program can be described as what all companies strive for but hardly ever reach. It is taught, re-taught, and enforced. Typically, we train in groups. Sometimes we break up groups into smaller groups and so that we employees can help and learn from each other. Most of the time there is a test and Q&A session. The trainer reads the question aloud and provides time for the employees to answer the question. After the employees complete the test the trainer reviews the questions and allow for the employees to self-grade their own test. It's hard for one supervisor/manager to grade 100</p>

- employee's tests. The evaluation portion of the test can be improved.
2. What language(s) are the safety training materials (quiz, Power Point slides, handouts, safety management program) written/presented in?
- All management personnel agreed that the training materials are English based.
3. Are there any methods in place to help English as a second Language (ESL) understand and comprehend safety training materials and policies and procedures at your organization?
- During many of our training sessions, we will appoint individuals to demonstrate or explain what was taught to ensure that there is an understanding of the topic.
- No. but there are often other employees that can translate in different languages; however, this does not happen all the time.
4. How are employees' comprehension skills evaluated after a safety training is conducted?
- Employees will be verbally questioned during the training sessions to verify that they understand the contents trained. In addition, many of our training include a written quiz. We have recently initiated an electronic response training program. We are able to evaluate and track comprehension levels immediately after each question. It has been identified that many of these ESL employees are still providing incorrect answers.
- It is not evaluated.
5. As a trainer, what are some challenges that you have observed during safety training sessions with ESL employees?
- ESL employees are apprehensive to ask questions because they feel embarrassed that other employees may think less of them. Therefore, during the training they may pretend that they understand the content being explained.

The employees do not understand or comprehend the information but say that they did understand the information.

6. Of all the strategies that have been utilized to train ESL employee, what methods have you used that works and what did not work?

Employee engagement in demonstrating and or voicing their thoughts rather than just taking a written test. In addition, making the trainings more entertaining and interesting to get the audience's attention to encourage engagement.

Translators worked the best but was also the worst. It was the best way to train ESL employees because there was someone that eased the stress and ensured the information was properly communicated. On the other hand, as a manager you have to trust that the information is be translated correctly.

7. Are you still using all of the methods that worked consistently during your safety training session for ESL workers? If some methods are not continuously used what obstacles or challenges exist that prevents the methods that work from being used?

Our main method of training that we consistently deploy is to create a relaxed environment. We try to keep a very light-hearted atmosphere to encourage people to feel less tense because of their limitations with the English language. We want people to feel that everyone is important contributor of our company. The challenges still exist however with some individuals who consistently feel intimidated because they don't fully understand what is being asked during the testing process.

8. Has your company ever tried using translanguaging by presenting training language in English and in the ESL employees' native language?

Yes, we have experimented using the translation process with our literature, however the employees have stated that it does not seem to reflect the actual meaning and therefore there is still confusion in the understanding.

Because we have such a diverse group of employees ranging from Hispanic, Chinese (multiple-dialects), Vietnamese. it would be virtually impossible to incorporate all of the languages in our training and testing processes. Therefore, the job application process becomes the most important tool to ensure that English proficiency is vital tool to the success of our programs.

9. How could the company improve its safety training materials for its ESL population?

More pictures as well as examples and less verbiage.

Writing a computer program that would give the ESL employee the power to pick the language of their native tongue.

Goal 1.B ESL participants responses of Company XYZ's training course materials for ESL employees. The ESL participants' responses to Company XYZ training course materials were separated into two tables based on open-ended and yes/no responses. The results for the ESL open-ended questions on the Company XYZ training materials section are listed in Table 3. Similar to the management personnel responses, 100% of the ESL participants expressed that safety-training materials are written and presented in English. For question 2 in Table 3, four ESL participants expressed that they were unfamiliar with certain English based words and terminology which contributes to them not understanding the safety training. Five other semi-ESL participants expressed that English sentence structure are written in a reverse way compared to their native language. For example, one employee indicated that in their culture they would say casa blanco (house white) to describe a house that is white but, in English such would be expressed as a white house where the adjective is placed in front of the noun. Per question 3 in Table 3, 11 out of 15 participants expressed that they do not inform their training

instructor when they do not understand English terms out of fear of being laughed at by their peers. Some activities that ESL participants have used to learn English was through conversations with bilingual family and friends, watching English based television programs, listening and singing to English based music, and by taking English based courses. For the last question in Table 3, ESL participants stated that the company should have documentation written and transcribed in multiple languages to go along with the English based power-points and visuals to help improve the company's training materials.

Table 3

ESL Personnel Focus Group Open-Ended Interview Responses for Company XYZ's Training Program

Categories	Questions	Responses
Company XYZ training program	1. What language are the safety training materials written and presented in?	All 12 ESL participants agreed that the safety related training materials were written and presented in English.
	2. What causes you not to understand English based trainings?	Four participants expressed that it is hard for ESL employees to understand English based terminology and words. Five participants stated that English verbs, nouns, and adjectives are the reversed to them compared to their native language. Participant #7 gave an example stating that in Spanish he would he would identify a white house as casa blanco (house white) whereas the English phrase would be stated in reverse as white house.
	3. Why do you not feel comfortable with informing your training instructor that	Eleven participants expressed that they are not comfortable with informing their instructor that they do not understand an English based term

you do not understand an English based term?	because they are intimidated by their peers and feel as though they would be laughed at.
4. What activities are most helpful to you for learning English language?	ESL participants provided several activities that helped them learn English which included a cellphone based translation app called dual lingo (#2,3,7), going to school to learn English (#1,4,5,8,9), having conversations with their friends and family who are bilingual (#1-#15), and singing along to English based songs (#1).
5. How could the company improve its safety training materials for ESL workers?	When this question was first asked, (8) participants expressed that having translators would help improve safety related training sessions, however this would be a difficult task because there are several different Asian languages that would need to be translated and would thus be time consuming. After performing the hazard evaluation segment, all 15 participants indicated that visuals and having varying languages transcribed in their native language helped them understand the safety-related training content.

The ESL results from the ESL yes/no based training questions are listed in Table 4. For question 1, in Table 4 100% of ESL participants felt as though it was important for them to understand safety-based topics. Eighty-three percent of the ESL participants agreed that the training is not presented in a language that they understand, and English based trainings are difficult to understand. All the participants indicated that they would be able to understand training information if the materials were written and presented in a language that they understood therefore, indicating a deficiency in Company XYZ training materials for the ESL population.

Table 4

ESL Focus Group Y/N Interview Question Responses for Company XYZ's Training Materials

Category	Question	Yes	No
Company XYZ training program	Do you feel that it is important for you to understand training about safety-based topics?	100% (12)	0
	Is safety training presented in a language that you understand?	16.6% (2)	83.3% (10)
	Are there times when training done in English is difficult for you to understand or follow?	83.3% (10)	16.6% (2)
	Would you like safety trainings to be easier for you to understand	83.3% (10)	16.6% (2)
	Do you feel that you would be able to understand training information if the materials are written and presented in the language that you're fluent in?	100% (12)	0

Goal 2.A Management participant's responses to hazard identification portion of focus group questionnaire. The researcher asked the management focus group four questions to assess Company XYZ's hazard identification program. The participants' responses are listed in Table 5.

Table 5

*Management Personnel Focus Group Open-Ended Interview Responses for Company XYZ's**Training Program*

Categories	Questions	Responses
Hazard Identification Program	1. What type of hazard identification programs does the company have in place?	We have an interactive web-based program that employees can go to input hazards and risks in our facility. We encourage and communicate this tool on a continuous basis to ensure its success. In addition, plant personnel are randomly selected to participate in safety inspections walkthroughs and risk assessments.
	2. Are any ESL employees involved in the risk assessment, job hazard analysis, or inspection teams?	Yes, active involvement amongst all of the employees is encouraged at all levels of our company. For the most part only the ones that speak both languages
	3. Can you provide any insight on ESL employee participation as it relates to reporting hazards utilize the company's reporting systems?	Our hazard identification program is capable of tracking the hazard inputs of all our employees throughout the entire facility. Many of our ESL employees are actively engaged in this program. There are, however, other ESL employees who do not get involved with the program because they are embarrassed or intimidated to enter in their concerns for fear of misspelling words or entering in the incorrect meaning. In a majority of situations, it is up to the supervisor to help or in some cases write the messages for the ESL employee into the companies reporting system.

4. Within the last year can you provide an approximate number of how many ESL participants reported hazards using Company XYZ reporting database?	One participant indicated that 21 ESL employees have reported hazards and another indicated that only 8 employees have participated in the program.
Are there any potential roadblocks that you notice from ESL employees who do not contribute in the company's hazard reporting process?	Yes, managers and supervisors have identified significant examples of hazards that should have been entered into our system but were not. These employees were not comfortable in entering the information because they were not confident with their English skills.

Goal 2.B ESL participants responses to hazard identification portion of focus group questionnaire. The ESL participants' responses to Company XYZ hazard identification program was separated into two tables based on open-ended and yes/no responses. Table 6 displays the participants' open-ended responses that detail the company hazard reporting process. All of the ESL participants mentioned that Company XYZ utilizes an in-house computerized hazard reporting system. For question 2 in Table 6, all the ESL participants worked together to explain the reporting process. If an operator finds a hazard, he/she logs into the company intranet to provide the location of the hazard, the type of hazard that was found, whether or not the hazard was eliminated or provide recommendations on how to fix it and then rate the severity of the hazard. Per question 3 in Table 6, ESL participants expressed that they have a difficult time typing English based sentences and thus this appears to be one of the major obstacles that prevent ESL employees from effectively utilizing Company XYZ's hazard reporting system.

Table 6

ESL Focus Group Y/N Interview Question Responses for Company XYZ's Training Materials

Category	Question	Response
Hazard Identification Program	1. What type of hazard identification programs does the company have in place?	All the ESL participants described a computerized hazard reporting system that Company XYZ utilize for employee input.
	2. How do you report hazards?	All the ESL participants indicated that they log into the company's intranet using their employee ID number and select the hazard reporting tab. Once the hazard system database opens, the ESL participants described several features within the application that he/she are required to fill out in order to submit hazard. The first tab that they fill out is the location of the hazard. To select the location the/she simply select the location dropdown area and select the zone within the facility where the hazard was present. After selecting the location of the hazard he/she types in a description of the hazard in the "find it" tab. After he/she types in the description of the hazard the employee then has the opportunity to fill out the "fix it" section where they can either put what was done to correct the hazard or provide recommendations on how to fix the hazard. At the end of the hazard entry webpage the employee is required to select the severity rate of the hazard which is broken down into three ratings which are one, three, and five. If the employee chooses one, then that means the hazard was rated as a low severity and that employee was able to correct the hazard. If the employee selects

three then it has a medium severity and if the employee selects five that means the hazard has a high severity indicating that they need additional assistance from supervisors or managers to correct the hazard. After the employee submits his/her hazard entry into the hazard reporting database, the information then appears in a list on the monitor displays throughout the plant to inform others about the hazard. If the background of the written hazard is green on the monitors, it informs the employees that the hazard was fixed. A hazard that appears with a white background indicates that it is still present within the facility. If the background of the hazard appears red, then the hazard was not fixed and is overdue for repairs. Employees mentioned that the Health and Safety Manager inserts a completion requirement date to close out hazards.

3. Can you describe any obstacles that prevent you from reporting hazards?

Typing and writing in English is difficult at times and the fear of not saying something or typing something correctly is intimidating. It takes a lot of time to try and type something in English and ESL employees cannot spend that much time because it takes away from production and they fear losing their job. Many ESL employee use spellcheck and Google to help generate sentences and the employees are not allowed to use cellphones on the plant floor.

To further assess the ESL participants' ability to identify hazards, the researcher presented English based hazard terms on power-point slides and asked participants to identify if

they understood what the terms meant with yes/no responses. Following one of the results of this exercise:

- Fifty-eight-point four percent of the ESL group indicated that they understood what slip, trip, hazards terms meant.
- Sixty-six-point six percent of the ESL group indicated that they did not understand the hazard term “struck by”.
- One hundred percent of the ESL group indicated that they did not understand the hazard term “ergonomic”.
- One hundred percent of the ESL group indicated that they did not understand the hazard term “access/egress”.
- Sixty-six-point six percent of the ESL group indicated that they did not understand the hazard term “electrical”.
- Sixty-six-point six percent of the ESL group indicated that they did not understand the hazard term “housekeeping”.

The results from this part of the study are listed in Table 7.

Table 7

ESL Focus Group Hazard Identification with English Terms Only

Category	Question	Yes	No
Hazard Identification Program	Ability to identify a slip, trip, fall hazard	58.3% (7)	41.6% (5)
	Ability to identify a struck by hazard	33.3% (4)	66.6% (4)
	Ability to identify ergonomic hazard	0	100% (12)
	Ability to identify an access/egress hazard	0	100% (12)
	Ability to identify an electrical hazard	66.6% (8)	33.3% (4)
	Ability to identify a housekeeping hazard	66.6% (8)	33.3% (4)

Following the English based hazard term review, the researcher then presented Power-Point slides that contained the hazard terms in English, visuals of the hazards and Vietnamese as well as Spanish translations (Appendix B). Similar to the first hazard review, participants were asked to identify if they understood what the terms meant with yes/no responses.

- One hundred percent of the ESL group indicated that they understood what “slip trip fall” hazard terms meant.
- Ninety-one-point six percent of the ESL group indicated that understood what the hazard term “struck by” meant.
- Eighty-three-point three percent the ESL group indicated understood the hazard term “ergonomic”.
- Eighty-three-point three percent the ESL group indicated that they understood the hazard term “access/egress”.

- One hundred percent of the ESL group indicated that understood the hazard term “electrical”.
- Ninety-one-point six percent of the ESL group indicated that understood the hazard term “housekeeping”.

The results from this part of the study are listed in Table 8.

Table 8

ESL Focus Group Hazard Identification with Visuals and Written in Multiple Languages

Category	Question	Yes	No
Hazard Identification Program	Ability to identify slip, trip, fall hazard (trượt, vấp, ngã) (Resbalones, tropezones y caídas peligro)	100% (12)	0
	Ability to identify struck by hazard (Bị nguy hiểm) (Golpeado por Peligro)	91.6% (11)	8.3% (1)
	Ability to identify an ergonomic hazard (Nguy hiểm công thái học) (Ergonómico Peligro)	83.3% (10)	16.6% (2)
	Ability to identify an access/egress hazard (nguy hiểm đi ra)(Egreso Peligro)	83.3% (10)	16.6% (2)
	Ability to identify an electrical hazard (nguy hiểm về điện) (peligro electrico)	100% (12)	(0)
	Ability to identify a housekeeping Hazard (Rủi ro vệ sinh) (Servicio de limpieza)	91.6% (11)	8.3% (1)

Summary

The purpose of this study was to identify the potential safety training impediments that exist for Company XYZ’s ESL workers. This chapter discussed the methodology as well as provided the results of the two objectives of the study. The first section focused on the

demographics which were comprised of the ESL personnel background questions, the ESL worker recruitment process at Company XYZ, English capabilities of ESL participants, and the trainers' language skillset questions. The second section focused on the focus group evaluation company training and testing materials for language that meets the needs of non-English speakers, with regard to communicating and assessing training program content. The third section focused on surveying methods used to determine ESL workers' ability to identify hazards associated with their work processes. The results in Chapter IV will be used to develop conclusions and recommendations in Chapter V.

Chapter V: Conclusions and Recommendations

This chapter summarizes the results and conclusions from the Chapter IV study and provides recommendations to improve Company XYZ's safety training program for the ESL population.

Purpose of the Study

The purpose of this study was to identify the potential safety training impediments that exist for Company XYZ's ESL workers.

Research Goals

The goals of this study were as follows:

1. Evaluate Company XYZ's training and testing materials for language that meets the needs of non-English speakers, both in communicating and assessing content.
2. Assess safety training surveying methods used to determine ESL workers' ability to identify hazards associated with their work processes.

Methodology

The researcher conducted two focus groups sessions for this qualitative study. One focus group session was comprised of ESL employees and the second group was comprised of management personnel. The instrumentation used in this study was comprised of 20-25 questions, which consisted of yes, no, and open-ended responses. The yes and no responses are commonly understood among all languages and determined if the interview questions were accurate. The open-ended responses provided participants with the opportunity to express their own thoughts and perceptions on the statements that were asked.

The interview questions for the management team was arranged into four parts related to the employer's recruitment process, perceptions of Company XYZ training materials, the

trainer's language skillset, and ESL workers contributions in the company's hazard identification program. The interview questions for the ESL participants was arranged into four parts related to the employees' background, English capabilities, perceptions of Company XYZ training materials, and the employees hazard identification abilities. The list of interview questions for each focus group can be found in Appendix A and Appendix B.

Data collection for the ESL workers and management personnel focus groups consisted of face-to-face interviews. Two bilingual production employees volunteered to serve as translators for the ESL focus group while the management group did not need translators. One employee translator is fluent in English and Spanish, and the other is fluent in several Asian languages.

The researcher initiated the study by reading each question aloud in English, then the translators repeated the questions in the employee's native language. After each question was read aloud and translated, the researcher allotted time to the participants to respond to the questions. Both the researcher and translators wrote down the employee responses in a notepad which identified each subject by his/her assigned number. At the end of the formal questioning session, the researcher provided participants with the opportunity to recommend the ways to improve Company XYZ's safety training program for ESL employees.

Conclusions

The results gathered from the study relied on the assumptions that all of the interviewed employees would answer the prepared focus group questions truthfully. The perceptions and experiences from the 15 management and ESL participants in one manufacturing industry were vital to help improve Company XYZ's training program for ESL employees. Both the management and ESL participants indicated that barriers and gaps within Company XYZ safety

training course materials and hazard identification program potentially placed ESL employees at risk for work-related injuries and/or illnesses. Significant conclusions can be drawn from the participants' responses and are further discussed in this chapter.

The first research goal of this study was to evaluate Company XYZ's training and testing materials for language that meets the needs of non-English speakers with regard to both communicating and assessing content. In order to evaluate whether or not Company XYZ's training materials were adequate the ESL employee population, it is important to establish and discuss the results from the demographic portion of the focus group questions. The results from the demographic section displayed that most of the ESL participants were of Asian as well as Hispanic descent. In Table 1, management participants confirmed that the ESL population that worked at Company XYZ's primarily consisted of Asian and Hispanic employees. Applicants that want to work at Company XYZ are required to pass the company's intake test that is used to measure the applicant's ability to proficiently read and understand English, which is the language requirement for this organization (Table 1). In Table 2, a management participant indicated that the job application process is the most important tool to ensure that an applicant is proficient in English. However, the hiring staff at Company XYZ have made exceptions for certain applicants who did not pass the intake test because the applicants had experience working in a similar industry (Table 1). Management participants also expressed that the ESL employee population within their company possessed a varying ability to speak, read, and understand English (Table 1). This data sheds light that there are employees within Company XYZ who are not proficient in the English language. The second major finding from the demographic section originated from the management trainer's language skillset section, which displayed that over half of the trainers spoke English-only, whereas 40% of the trainers spoke Spanish and none of the trainers

had a working knowledge of any Asian languages (Figure 13). The demographic section displayed that the diverse ESL population of Hispanic and Asian workers possessed a varying ability to read, write, and/or speak English. It also displayed that several trainers are able to communicate to the Hispanic ESL employees, but not the ESL Asian employees which displayed potential communication barriers between the Asian ESL population and management. Subsequently, half of the participants expressed that there were communication problems between management and ESL employees at Company XYZ (Figure 12). Management personnel (Goal 1A) and ESL participants (Goal 1B) results are discussed in the next two sections.

Goal 1.A Management Focus group responses of Company XYZ's training course materials for ESL employees. In Table 2, the management participants indicated that Company XYZ's training materials were written and communicated only in English (Table 2). Company XYZ previously used translators during the training sessions and this practice was deemed successful, but the trainers weren't comfortable with that approach because they were unsure if the information was being translated correctly (Table 2). Company XYZ training materials had been transcribed from English to Spanish, but the ESL Hispanic employees indicated that the materials were not transcribed correctly (Table 2). Based on the management responses Company XYZ's training may be inadequate for ESL employees.

To evaluate ESL employees' competency of the safety training materials the management participants indicated that the trainers verbally questioned employees by random selection (Table 2). Based on time constraints and class sizes, the trainer could not verbally question every employee in the training class. An additional evaluation technique that trainers utilized to verify training competency for all employees were paper tests. Again, due to time constraints, the

trainer did not have enough time to grade 80 tests and provide instant feedback on the employees' test results. Therefore, the trainer had each employee self-grade and correct his/her own test and thus did not effectively determine if the ESL employees truly understood the training materials due to the possibility of employees filling in the test when the answers were read aloud.

In 2018, Company XYZ purchased an Audience Response System (ARS) which allowed employees to answer test-based questions that were displayed on the Power-Point test using remotes that were assigned to them based of the employees' operator identification number. The ARS allowed for the trainer to observe real-time results and provided the trainers with the opportunity to evaluate the employee competencies level. Based on the first year of implementing the ARS testing technique, the trainers indicated that ESL employees were providing incorrect answers to the 2018 tests (Table 2). In addition to the ESL employees answering test questions incorrectly, one of the other challenge's trainers observed that certain workers were apprehensive to ask the trainers questions during training session because they would feel embarrassed if their peers thought less of them (Table 2). The major findings from the management assessment of Company XYZ's training materials portion were that all of the documents were written/presented in English, ESL employees were not understanding the training materials based on their test scores, and the ESL population were intimidated to inform the trainer when they did not understand English-based training terms and concepts.

Goal 1.B ESL participants responses of Company XYZ's training course materials for ESL employees. The results for the ESL participants' perception of Company XYZ training materials were comprised of open-ended and yes/no responses. Similar to the management focus group responses, the ESL participants indicated that Company XYZ training materials were

written and communicated only in English (Table 3). Four participants expressed that it is hard for ESL employees to understand English-based terminology and words. Five of the ESL participants stated that English verbs, nouns, and adjectives sentence structure are reversed when written and/or spoken to them compared to their native language (Table 3). It appears that some of the ESL participants do not understand the training materials because it is written and communicated in English instead of the employees' native language. Similar to the management response, ESL employees do not feel comfortable with informing their trainer if they do not understand an English based-term because the ESL employees are intimidated by what their peers would think of them and potentially be laughed at (Table 3).

The second portion of the ESL perception of Company XYZ training materials (Goal 1B) consisted of participants providing yes/no responses. One hundred percent of the ESL participants expressed that it is important for them to understand safety training materials, 83.3% of the group indicated that the materials are not presented in a language that they understand, and 100% of the participants expressed that they would understand the materials if it was written/presented in their native language.

Goal 2.A Management participant's responses to hazard identification portion of focus group questionnaire. The second objective was to assess safety training surveying methods used to determine ESL workers' ability to identify hazards associated with their work processes and is separated and discussed based on the management participants (Goal 2A) and the ESL group responses (Goal 2B). Company XYZ utilizes a computerized hazard reporting system that all employees are prompted to use. Employees simply type in a hazard that they have identified and submit it into the system. In addition to the computerized hazard reporting system, employees are randomly selected to participate in safety inspections and risk assessments

(Table 5). One management participant expressed that all employees participate in the hazard identification program whereas another participant stated that only bilingual employees participate in the program (Table 5). The researcher asked how many ESL employees reported hazards in the system and the interviewed management participants provided two different responses. One management participant indicated that 21 ESL employees reported hazards whereas another participant stated only 8 ESL employees reported hazards in 2018 (Table 5). There appears to be a gap within the management participants' responses in regard to how many ESL employees participates in Company XYZ's hazard identification program. However, based on the ESL responses in Table 6, most ESL participants expressed that they have not participated in the computerized hazard reporting system because of their limited ability to formulate and type English-based sentences.

Goal 2.B ESL participants responses to hazard identification portion of focus group questionnaire. The second part of the ESL assessment of hazards consisted of the researcher displaying hazard terms to ESL participants and having them use yes/no statements to indicate if they understood the hazard terms. The hazard terms that were used in this portion of the study included slip, trip, fall, struck by, ergonomic, access, egress, electrical, and housekeeping hazards (Table 7). The research displayed the hazard terms in English only for the hazard assessment pre-test. The top three hazard terms that over half of the participants indicated that they understood were electrical (66.6%), housekeeping (66.6%), and slip, trip, fall (58.3%). The three terms that the ESL participants indicated that they did not understand were access/egress (100%), ergonomic (100%), and struck by (66.6%) hazard terms. After presenting the hazard terms in English, the researcher then performed a post-test using the same group of hazard terms with visuals and Vietnamese/Spanish transcriptions. The results from the second hazard

assessment increased significantly as the participants results with expressed that they understood the terms at a rate of 83.3% or higher for each term. The participants displayed substandard scores on the English hazard assessment portion and performed exceptionally well during the post-test with visuals and when the hazard terms were in their native language.

Recommendations

The focus group questionnaire for the management and ESL participants proved to be an effective tool for assessing Company XYZ safety training materials and hazard identification program. The data collected from this study is essential to help Company XYZ make improvements for Company XYZ's training and hazard programs for ESL employees.

Training program recommendations. Company XYZ training materials and sessions can be strengthened for ESL employees by incorporating the translanguaging technique within the handouts or in the Power-Point presentations, restructuring the target audience within the training course, and/or by providing ESL employees with the opportunity to take English language courses.

The hazard assessment test with visuals and translated materials prompted the ESL population to understand the hazard-based terms as opposed to writing such terms solely in English. Company XYZ previously had training materials transcribed into Spanish but they may have not utilized a proper translating resource or program. Company XYZ could utilize the Susan Harwood Safety Training Grant materials listed on the OSHA webpage underneath the Training Resources tab. There are currently over 100 training session that are transcribed in multiple languages including English, Spanish, and Asian. Out of the annual training sessions that management listed in Table 2, the following three training presentations are readily accessible in the Susan Harwood Training materials section of the OSHA webpage:

- Grants SH-24928-SH3 and SH-27686-SH5 for the Hazard communication and the Globally Harmonized System of classification and Labeling of Chemicals training that is transcribed in English and Spanish.
- Grant SH-17036-08 for Walking/Working Surfaces: Slips, Trips and Falls that is transcribed in English and Vietnamese.
- Grant SH-19505-09 Ergonomics training for General Industry that is transcribed in English and various Asian languages as displayed in Figure 15 (OSHA, n.d.e).

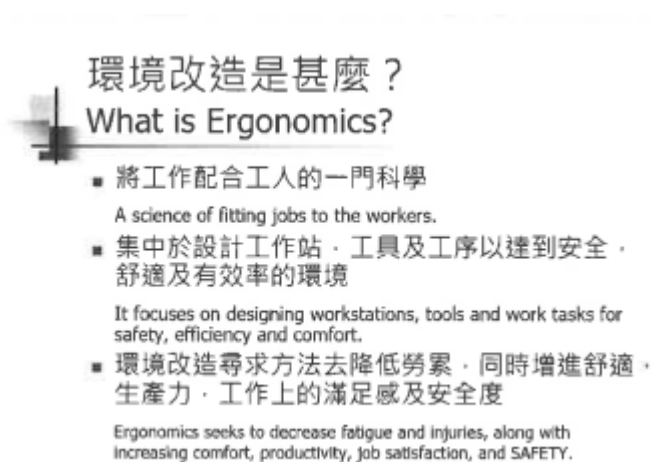


Figure 15. Susan Hardwood Grant SH-19505-09 ergonomics training for general industry example.

Because the Susan Hardwood trainings are not transcribed in all of the languages, Company XYZ would have to consider training employees in groups based on their native language.

The bloodborne pathogen, lockout tagout, voluntary respirator, forklift operator, and forklift pedestrian trainings have not been transcribed into Spanish or Asian training materials in the Susan Hardwood Training webpage, however, there are other companies who have developed online training courses in various language like Underwriter Laboratories (UL). UL has online training courses in all three languages for the following courses:

- Bloodborne pathogens in English, Chinese, and Spanish with a cost of \$24.95 per person
(Underwriter Laboratories [UL], 2019).
- Industrial Ergonomics in English, Mandarin Chinese, and Spanish with a cost of \$24.95
(UL, 2019).

If Company XYZ decided to utilize the online courses, it would need to allocate time and computers for employees to use during their scheduled work hours.

An alternative approach that Company XYZ could pursue with regard to constructing effective training materials for ESL employees would be for the management team to either hire professional translators or work with the bilingual employees to build adequate training materials with the use of professional translators, Company XYZ could utilize the current training materials and have standardized training materials for all employees which are tailored to that particular site.

Company XYZ currently funds to promote employee health-based initiatives for employees to stay active. Management within Company XYZ either set aside a fund to pay for English-based courses or provide employees with resources on available ESL courses that is funded by the US government for employees who express an interest in improving their English skills. There are numerous ESL language schools located in or around the city of Chicago that the employees could enroll in English courses. Company XYZ could team up with free Adult Based Education organizations that are located within Forest Park, IL, to promote the ESL-English courses. The U.S. Department of Labor's Career One Stop program offers free

ABE English courses for ESL employees (Career Onestop, 2019). Employees who choose to take free ABE courses can simply click the find adult basic education link on the Career Onestop webpage and input their home zip code into the National Literacy Database to locate ABE centers within close proximity to their homes (National Literacy Directory, 2019). Company XYZ could also provide interested employees with a list of centers located near employees' homes by using the registry database. There are currently 43 ABE locations within five miles of Company XYZ. ESL employees who participated in this research study expressed that taking courses has helped them in the past to learn English and may be interested in taking additional classes (Table 3). The next section will focus on providing recommendations for Company XYZ's hazard reporting program.

Hazard reporting and assessment program recommendations. Company XYZ utilizes multiple processes to assess employees' ability to identify, fix and/or provide recommendations to mitigate hazards in the workplace. The management and ESL employees both described Company XYZ's hazard reporting system in Tables 5 & 6. One management participant expressed that only eight ESL participants reported hazards in 2018 while the ESL participants indicated that they had not reported any hazards in the system. Both focus group participants indicated that ESL employees are not confident with their English skills. The current hazard reporting system requires employees to type hazard statements which is displayed in Figure 16.

Username: (Select Name from dropdown menu)	Date: (Select Date from dropdown menu)	Location/Zone: (Select location/zone from dropdown menu)	Tool/Machine: (Select tool/machine from dropdown menu)
Find It: (Type in the description of the hazard)			
Fit It: (Type in what you did to fix hazard or provide recommendation)			
Severity: (Select Hazard severity option)	(1): Low, Hazard Fix	(5): Medium need some additional assistance	(9) Immediate Danger

Figure 16. Company XYZ's current computerized hazard reporting database.

ESL participants also expressed that it requires a significant amount of time to type in hazard sentences and fear losing their job if they take too much time inputting a hazard because such would take away time from production. Figure 17 displays a suggested minor modification to the hazard reporting system which provides a checklist of common hazard terms applicable to Company XYZ's site in various languages utilizing the hazard terms from the assessment section of this study. Providing employees with the hazard checklist option and translations would alleviate certain stressors that prevents them from reporting hazards. Company XYZ's Informational Technology Department developed the hazard reporting database and thus would likely be able to perform the recommended modifications.

Username: (Select Name from dropdown menu)	Date: (Select Date from dropdown menu)	Location/Zone: (Select location/zone from dropdown menu)	Tool/Machine: (Select tool/machine from dropdown menu)
Find It: Select Hazard Category:			
English <input type="checkbox"/> Slip Trip Fall <input type="checkbox"/> Struck By <input type="checkbox"/> Ergonomic <input type="checkbox"/> Access/Egress <input type="checkbox"/> Electrical <input type="checkbox"/> Housekeeping	Spanish Resbalones, tropezones y caídas peligro Golpeado por Peligro Ergonómico Peligro Egreso Peligro peligro electrico Servicio de limpieza	Vietnamese trượt, vấp, ngã Bị nguy hiểm Nguy hiểm công thái học nguy hiểm đi ra nguy hiểm về điện Rủi ro về sinh	
Fit It: (Type in what you did to fix hazard or provide recommendation)			
Severity: (Select Hazard severity option)	(1): Low, Hazard Fix	(5): Medium need some additional assistance	(9) Immediate Danger

Figure 17. Recommendation to improve Company XYZ's current computerized hazard reporting database for ESL employees.

Additional Suggested Research

Overall, further research studies may be focused on developing and implementing effective training materials and hazard assessments for ESL employees with the goal to mitigate workforce injuries for this specific work group.

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Appendix A: Health and Safety Manager and Supervisor Focus Group Questions

Recruitment Process:

1. How do you find ESL work applicants?
2. What ethnic groups contribute to your ESL workers within your company?
3. What language requirements are required to be hired by your organization?
4. How is language proficiency assessed for you workers?
5. Have you ever made exceptions for some employees who did not pass the language proficiency criteria? If so, why and what method did you utilize to ensure that the employee can understand safety policies, procedures, and training requirements?
6. Have you used publicly funded entities such as one stop centers, job centers, the Employment Service and technical schools in the recruitment process? A. Have you used any of these entities to provide follow-up service such as English as a Second Language (ESL) training? B. How satisfied were you with these services? C. Are there other services/programs you would like to have available?

Company XYZ Training Materials:

1. Can you describe your safety-training program? What does a typical safety training consist of (process, materials)?
2. What language(s) are the safety training materials (quiz, Power Point slides, handouts, safety management program) written/presented in?
3. Are there any methods in placed to help English as a second Language (ESL) understand and comprehend safety training materials and policies and procedures at your organization?

4. How are employees' comprehension skills evaluated after a safety training is conducted?
5. As a trainer, what are some challenges that you have observed during safety training sessions with ESL employees?
6. Of all the strategies that have been utilized to train ESL employee, what methods have you used that works and what did not work?
7. Are you still using all of the methods that worked consistently during your safety training session for ESL workers? If some methods are not continuously used what obstacles or challenges exist that prevents the methods that work from being used?
8. Has your company ever tried using a translanguaging by presenting training language in English and in the ESL employees' native language?
9. How could the company improve its safety training materials for its ESL population?

Trainer's Language Skillset:

1. Does the training manager/supervisors have a working knowledge of other languages and if so, what languages?
 - A. Do the managers who speak another language help translate safety-training materials?
2. Would the supervisors/managers who do not speak a second language be interested in taking a course to learn a second language?

Hazard identification Program:

1. What type of hazard identification programs does the company have in place (i.e risk assessment, job hazard analysis, inspection teams etc.)?

2. Are any ESL employees involved in the risk assessment, job hazard analysis, or inspection teams?
3. Can you provide any insight on ESL employee participation as it relates to reporting hazards utilize the company's reporting systems?
4. Within the last year can you provide an approximate number of how many ESL participants reported hazards using Company XYZ reporting database?
5. Are there any potential roadblocks that you notice from ESL employees who do not contribute in reporting process?

Appendix B: ESL Focus Group Questions

Personal background:

1. What ethnicity or race do you classify as?
2. How long have you lived in the United States?
3. How long have you worked in the manufacturing industry?

English Capabilities:

1. Do you speak any other language than English?
2. What is your first language?
3. What activities within your job related to safety require you to read/write in English?
4. Have you taken any English courses to help learn this language?
5. Are you satisfied with your ability to communicate with other employees and management at work?
6. Are there communication problems between management and ESL employees on the jobsite?

Company XYZ training Program:

1. Do you feel that it is important for you to understand training about safety-based topics? (Y/N)
2. What language are the safety training materials (Quizzes, PowerPoint slides, Handouts, Safety Management Program) written and presented in? (Open-ended)
3. Is safety training presented in a language that you understand? (Y/N)
4. Are there times when training done in English is difficult for you to understand or follow? (Y/N)

5. Would you like safety trainings to be easier for you to understand? (Y/N and Open-ended response)

If yes, what causes you not to understand safety training?

6. Are there times when you do not understand an English word, but you do not let the training instructor know this? (Y/N)

If yes, explain why you do not feel comfortable with informing the training instructor? (open-ended)

7. Do you feel that you would be able to understand training information if the materials are written and presented in the language that you're fluent in? (Y/N)
8. What activities are most helpful to you for learning English language? (open-ended)
9. How could the company improve its safety training materials for ESL workers? (open-ended)

Hazard Identification Program:

1. What type of hazard identification programs does the company have in place? (open-ended)
2. How do you report hazards? (open-ended)
3. Has anyone conducted a weekly/quarterly inspection? If so, did you understand all of the hazard categories on the checklist? (open-ended)
4. Using yes and no responses indicate if you understand the following 77444

Vietnamese: **nguy hiem**
 • Các câu hỏi sau đây sẽ chứa thuật ngữ *nguy hiem*



Spanish: **Peligro/ Riesgo.**
 • Las siguientes preguntas contendrán terminología sobre el *peligro.*

- a. Ability to identify a “slip, trip, fall” hazard (**trượt, vấp, ngã**) (**Resbalones, tropezones y caídas peligro**)

Slips, Trips, Falls Hazards

Vietnamese: **trượt, vấp, ngã**
(**ngã cầu thang**)

- A. Tôi *trượt* trên sàn ướt.
B. Tôi *vấp* phải một sợi dây.
C. Tôi đã bị *ngã* xuống sàn



Resbalones, tropezones y caídas peligro.

- A. Me *resbalé* en un piso mojado.
B. Me *tropecé* con una cuerda.
C. *Cái* al suelo.



- b. Ability to identify a “struck by” hazard (**Bị nguy hiểm**) (**Golpeado por Peligro**)

Struck By Hazard

Bị nguy hiểm

- A. Bị mắc kẹt bởi một chiếc xe nâng



Golpeado por Peligro

- A. *Golpeado* por un montacargas.



- c. Ability to identify an “ergonomic” hazard (**Nguy hiểm công thái học**) (**Ergonómico Peligro**)

Ergonomic Hazard

Nguy hiểm công thái học

A. Trong khi làm việc tôi cúi đầu rất nhiều.

Tôi cảm thấy đau ở cổ.

Đây là một mối nguy hiểm công *thái học*



Ergonómico Peligro

A. Mientras estoy en el trabajo doblo mucho la cabeza.

Y Siento dolor en el cuello.

Este es un peligro *ergonómico*.

d. Ability to identify an “access/egress” hazard (**nguy hiểm đi ra**) (**Egreso Peligro**)

Access/Egress Hazard

nguy hiểm đi ra

A. Cửa đi ra bị tắc nghẽn bởi các hộp

B. Cửa thoát hiểm bị chặn.

Đây là một vấn đề *đi ra*.



Egreso Peligro

A. La puerta de salida está obstruida por cajas.

B. B. La puerta de salida está bloqueada.

Este es un problema de *egreso*.

e. Ability to identify an “electrical” hazard (**nguy hiểm về điện**) (**peligro electrico**)

Electrical Hazard

Vietnamese: **nguy hiểm về điện.**

Tôi chạm vào một sợi dây bị đứt được cắm vào ổ cắm.

Tôi đã bị sốc với điện.

Đây là một mối *nguy hiểm về điện*.



Eléctrico

Toqué un cable roto que estaba enchufado a un enchufe.

Me sorprendió la electricidad.

Esto es un *peligro eléctrico*.

- f. Ability to identify a “housekeeping” hazard (**Rủi ro vệ sinh**) (**Servicio de limpieza**)

Housekeeping Hazard:

Rủi ro vệ sinh

Tôi vấp phải một cái
hộp ở lối đi do *nguy*
ro vệ sinh



Servicio de limpieza

Me tropecé con una caja
que estaba en el pasillo
debido a la *falta de*
limpieza.

5. Can you describe any obstacles that prevent you from reporting hazard?

Appendix C: Translator Confidentiality Form**Confidentiality Agreement-Translator**

I, _____ have been engaged as an assistant on the Safety Training Impediments that exist for English as Second Language Employees at Company XYZ research study and may be required to interpret, translate or transcribe focus group interview questions and responses in this role. In carrying out these activities, I will communicate information faithfully to the best of my abilities.

I understand that all of information provided by focus group participants is confidential and I agree not to use or disclose this information except as required in the course of my duties as a research assistant. All of the records that I transcribe will be given directly to the researcher at the end of the focus group session. I will not retain any copies of the transcribed documents.

Translator Signature

Date

Appendix D: Consent to Participate in UW-Stout Approved Research

UW-Stout Signed Consent Statement for Research Involving Human Subjects

Consent to Participate In UW-Stout Approved Research

Project Title:

Safety Trainings Impediments that exist for English as Second Language Employees at Company XYZ

Description:

The purpose of this study is to identify any communication gaps that exist in Company XYZ safety training program for English as a second language employees (ESL). If you agree to participate in this study, you will be asked to participate in a focus group interview session. The focus group will consist of ESL employees from Company XYZ and the topics discussed will relate to issues of common concerns for English as second language employees with understanding the organizations safety training materials.

Risks:

I do not anticipate any risks to you participating in this study other than those encountered in day-to-day work life.

Benefits:

The benefits of the study include improving the safety training materials and courses for English as second language employee to bridge communication gaps between management and employees.

Confidentiality:

The records of this study will be kept private. Your name will not be included on any documents. The informed consent will not be kept with any of the other documents completed in this project.

Future Use: The data collected during this study will not be used in a future study.

Time Commitment: The time commitment for this study is one-hour per focus group session.

Right to Withdraw:

Your participation in this study is entirely voluntary. You may choose not to participate without any adverse consequences to you. You have the right to stop the survey at any time. However, should you choose to participate and later wish to withdraw from the study, there is no way to identify your anonymous document after it has been turned into the investigator. If you are participating in an anonymous online survey, once you submit your response, the data cannot be linked to you and cannot be withdrawn.

IRB Approval:

This study has been reviewed and approved by The University of Wisconsin-Stout's Institutional Review Board (IRB). The IRB has determined that this study meets the ethical obligations required by federal law and University policies. If you have questions or concerns regarding this study, please contact the Investigator or Advisor. If you have any questions, concerns, or reports regarding your rights as a research subject, please contact the IRB Administrator.

Investigator:

MaryAnn Feliciano
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 952-402-7523

Advisor:

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Statement of Consent:

By signing this consent form you agree to participate in the project "Communication Gaps that Exist in Safety Trainings for English as Second Language Employees at Company XYZ"

 Name

 Date

Appendix E: Company XYZ Recruitment Flyer



MARCH 16, 2019 FOCUS GROUP SESSIONS

Focus Group Research Study

Looking for English as Second Language Employees who would like to participate in a one-hour focus group session to discuss potential communication/language barriers that

exist in Company XYZ safety training program.

Participation is completely **voluntary, and participants can **withdraw at any given time** without any repercussions*

Voluntary Study

If you are interested, please contact MaryAnn Feliciano through email

MARYANN FELICIANO
EMAIL:

Felicianom7037@my.uwstout.edu

