

Job Safety: Applying Critical Incident Techniques to
Job Safety for Residential Restaurant Operations

By

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ABSTRACT

This study examines job safety in the University of Wisconsin-Milwaukee Residential Restaurant Operations. The key to this study is the implementation of the critical incident technique. This implementation uses direct observation, interviews, and surveys, the critical components of duties, tasks, and behaviors. These are observed, detailed, and known. As a result, the difference between adequate performance and inadequate job performance, while performing proper safety measures to prevent injuries, will be deduced. This project will review several objectives for the production position in the Residential Restaurant Operations (RRO). The first will identify requirements for doing a job effectively without accidents. The second will predict and control performance so workers can accomplish their duties and tasks correctly, efficiently, and safely. The third area touches upon creating a safe and productive work environment by

removing barriers, redesigning specific job duties, and training will identify the critical components of the job. New training will be designed and implemented so the critical components are stressed. Furthermore, this study exam the theoretical and practical values of multiple intelligences, critical thinking, and reflection in order to better understand how the study's data can help the RRO become a safer, productive workplace as multiple intelligences, critical thinking, and reflection become key components of employee performance. Essential for gathering this data is the critical incident technique as John Flanagan (1954) developed it. He particularly specified these methodological steps: a description of the situation, an account of the actions or behavior of the employee in the incident, the outcome or result, followed by concluding whether the incidents are either effective or ineffective actions. These steps guide this study's method, and they are key for understanding how critical incident techniques help to foster safety and productivity in the RRO.

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TABLE OF CONTENTS

ABSTRACT.....	ii
List of Tables	viii
List of Figures	x
Chapter I: Introduction.....	1
<i>Statement of the Problem</i>	3
<i>Purpose of the Study</i>	3
<i>Research Objectives</i>	4
<i>Hypothesis</i>	4
<i>Assumptions of the Study</i>	5
<i>Definition of Terms</i>	5
<i>Limitation of Study</i>	8
<i>Methodology</i>	8
<i>Summary</i>	9
Chapter II: Literature Review	11
<i>Summary</i>	34
Chapter III: Methodology	35
<i>Problem Statement</i>	35
<i>Research Objectives</i>	35
<i>Subject Selection and Description</i>	36
<i>Research Design</i>	37
<i>Instrumentation</i>	37
<i>Data Collection Procedures</i>	45

<i>Data Analysis</i>	46
<i>Limitations</i>	46
<i>Summary</i>	46
Chapter IV: Results.....	48
<i>Item Analysis</i>	51
Chapter V: Discussion	87
<i>Limitation</i>	89
<i>Conclusion</i>	90
<i>Recommendation</i>	91
References.....	94
Appendix A: Job Hazard Analysis.....	99
Appendix B: Job Hazard Analysis Sheet.....	100
Appendix C: Safety Inspection	101
Appendix D: Safety Checklist	103
Appendix E: Safety Managing	104
Appendix F: Safety Meetings	105
Appendix G: Behavior Observation	106
Appendix H: Interview	107
Appendix I: Model.....	108
Appendix J: Job Broken Down by Job	109
Appendix K: Task Analysis for Dicing Onions.....	110
Appendix L: Job Description.....	111
Appendix M: Competency for Cook	116

Appendix N: Survey	118
Appendix O: Consent Letter	122
Appendix P: Notification Letter	123
Appendix Q: IRB	124
Appendix R: Cover Letter.....	125
Appendix S: Follow-Up Letter	126
Appendix T: Interview Thank-You Letter.....	127
Appendix U: Survey Thank-You Letter	128

List of Figures

Figure 1: Decision Table.....	50
Figure 2: Survey Question 12: Title of Job.....	84
Figure 3: Survey Question 13: Gender	84
Figure 4: Survey Question 14: Years of Food Service Experience	85
Figure 5: Survey Question 15: ServSafe Certification	85
Figure 6: Survey Question 16: Safety Certification.....	86

List of Tables

Table 1: Interview Question 1	54
Table 2: Interview Question 2	54
Table 3: Interview Question 3	55
Table 4: Interview Question 4	56
Table 5: Interview Question 5	57
Table 6: Interview Question 6	57
Table 7: Interview Question 7	58
Table 8: Interview Question 8	59
Table 9: Interview Question 9	59
Table 10: Interview Question 10	60
Table 11: Interview Question 11	61
Table 12: Interview Question 12	62
Table 13: Survey Question 1	66
Table 14: Survey Question 2	66
Table 15: Survey Question 3	67
Table 16: Survey Question 4	68
Table 17: Survey Question 5	68
Table 18: Survey Question 6	69
Table 19: Survey Question 7	70
Table 20: Survey Question 8	71
Table 21: Survey Question 9	72

Table 22: Survey Question 10	73
Table 23: Survey Question 11: Statement 1	74
Table 24: Survey Question 11: Statement 2	75
Table 25: Survey Question 11: Statement 3	76
Table 26: Survey Question 11: Statement 4	77
Table 27: Survey Question 11: Statement 5	78
Table 28: Survey Question 11: Statement 6	79
Table 29: Survey Question 11: Statement 7	80
Table 30: Survey Question 11: Statement 8	81
Table 31: Survey Question 11: Statement 9	82
Table 32: Survey Question 11: Statement 10	83

Chapter I: Introduction

The Residential Restaurant Operations is part of the University of Wisconsin-Milwaukee campus. The University of Wisconsin system is comprised of thirteen four-year campuses and thirteen UW-Extensions and UW Colleges. The University of Wisconsin-Milwaukee is one of the thirteen comprehensive campuses in the University of Wisconsin System, founded in 1956. UW-Milwaukee has a current enrollment of 27,000, with 83 undergraduate programs, 48 master programs, and 19 doctoral programs.

Special facilities include a learning resource center, an art gallery, a planetarium, a geological museum, and a radio station. The 93-acre campus is in an urban area just outside of downtown Milwaukee. About 93% of undergraduates are from Wisconsin. Students also come from 40 states and 69 foreign countries. 85% of students commute to UWM. A total of 2,700 students can be accommodated in coed dormitories, available on a first-come, first-served basis. The dormitories are centrally located and the campus is a “walking campus,” with most classes within ten minutes of each other. The division of student affairs houses Auxiliary Enterprises, which consists of the bookstore, panther card, reservation and events, off campus housing, university housing, the student union, and restaurant operations.

Restaurant operations is divided into five different categories, residential, retail, catering, vending and the warehouse of campus dining which are all self-managed through one department, restaurant operations. There are a total of thirteen dining units that provides sophisticated consumers with broad based purchasing experiences. The overall mission is to provide a quality experience at an affordable price in a variety of settings, and quality is recognized as being client driven and rooted in menu variety, product consistency, friendly service and innovative delivery systems.

This study is focused on the UW-Milwaukee Residential Restaurant Operation. The Residential Restaurant Operation (RRO) is charged with the development and oversight of the food service operation for approximately 2,700 on-campus residents. The RRO consists of a residential dining hall, a late night operation, and a campus C-store.

The Sandburg café is located on the second floor of the large residential housing complex, it consists of a scramble system as the main-stay, and it is open for breakfast, lunch and dinner (6:45 AM - 7 PM), as an à la carte style dining hall. The Palm Garden is the late night operation (7 PM - 1 AM); it offers made-to-order sandwiches, pizzas, hot entrees, satisfying appetizers, and gourmet bakery items, and both carry out and dine in selections are available. The Emporium is a retail convenience store with some take-out food items (7:45 AM – 12:00 AM); it serves primarily the residents of Sandburg Hall. These residential facilities mostly accommodate the residents of Sandburg Hall, but some faculty and staff use these facilities as well.

Additionally, the RRO houses the main production for retail units and the catering department. The unit's full-time personnel involve four managers, one executive chef and eight civil servant employees. The part-time personnel encompass twelve student managers along with two hundred and twenty part-time students and eleven limited term employees.

The demand and the need for more on-campus housing at UWM have increased drastically in the past years, which will increase the RRO's responsibilities and production considerably. The university is currently planning for the development of an additional residence housing and food service facility, located on North Avenue, roughly five miles away from campus. Presently the RRO has a high level of workplace accidents. Because of this additional residential housing and food service, it will become even more important for the RRO to figure

out how to reduce accidents while continuing to be productive in delivering a level of high quality to a large, diverse, and growing university community.

Statement of the Problem

The department of Residential Restaurant Operations (RRO) at the University of Wisconsin-Milwaukee is experiencing an increase of accidents in its food service production. These accidents are affecting productivity, endangering staff, and increasing costs. Given that the RRO is expanding in the next year, it is clear that productivity will grow and, in so doing, the RRO's productivity needs to become more efficient, quality-minded, cost-effective, and with less accidents and injuries. Therefore, the RRO needs to analyze and determine why accidents and injuries are occurring and increasing. If the RRO's current operation is to become more productive, and if its' future production can excel with quality service and profitability, accidents need to be identified, their causes need to be determined, and a new program for safety, learning and production implemented. This current study will investigate the critical components of duties, tasks, and behaviors that are necessary for knowing the differences between adequate and inadequate job performance. Key to this investigation is the understanding of how employees can perform optimally while being cognizant of proper safety measures in order to reduce accidents and injuries.

Purpose of the Study

The purpose of this study is to analyze and determine why accidents and injuries are occurring and increasing within the RRO. Conducting research primarily through the critical incident technique, this study will analyze duties, tasks, and behaviors in relation to job safety, while considering the effects multiple intelligences, critical thinking, and reflection can have in producing greater, positive employee performance and safety. Furthermore, this study intends to

determine the need for a safety program and manual, as well as possibilities of implementing a form of continuing education so the RRO can become an even safer, productive workplace.

Research Objectives

The Objectives of this research are:

- To identify duties and tasks performed by employees.
- To identify critical job requirements to be able to do the job effectively without accident.
- To identify any job hazards contributing to accidents.
- To identify a safer, productive workplace through the incorporation of job training, the redesigning of jobs, and the redesigning and/or replacement of equipment that is unsafe.
- To identify how multiple intelligences, critical thinking, and reflection can contribute to a safer, productive workplace.
- To identify a need for a safety program and manual.

Hypotheses

Hypotheses One: Employees who have immediate, consistent, and positive follow-up on safety compliances in the organization will have a reduction in the number of safety-related events that lead up to injuries.

Hypotheses Two: An employee who receives safety training and knows how to properly use protective safety equipment will contribute to a safer workplace.

Hypotheses Three: Employees who identify job hazards will reduce accidents.

Hypotheses Four: Employees who use critical thinking skills and rely on their multiple intelligences to perform tasks will have less safety injuries.

Hypotheses Five: Multiple intelligences, critical thinking, and reflection, particularly through communication and writing, may help employees become more conscious of the relations between performance, safety, and productivity.

Assumptions of the Study

This study assumes that all the information gathered for this research project is accurate.

Furthermore, the following additional assumptions are at work in this study:

- Participants will be knowledgeable and comfortable with this study's various research instruments.
- Participants in this study will be truthful and honest in their responses.
- Participants in this study will find their participation meaningful and valuable.
- This study's data is meaningful and will help to justify its conclusions.
- The Residential Restaurant Operation will find the data and its conclusions informative and beneficial for the continued growth and productivity of the organization.

Definition of Terms

The following terms are defined to better understand the purpose and relevance of this study:

Accidents: An event that is unexpected or unforeseen, resulting in injury, loss, or damage (Puckett, 2006).

Action Research: A form of self-reflective problem solving, which enables practitioners to better understand and solve pressing problems in social settings (McKernan, 1988).

Analysis: Breaking down a whole into organized parts while relating the parts to each other or the whole (Lee and Nelson, 2006).

Chef, Cook, and Food Preparation Worker: An occupational title for a worker who prepares, delivers, sets up, and serves large quantities of food in a variety of restaurants and other food services establishments (U.S. Department of Labor, Feb. 2006).

Competent Person: A person who is capable of identifying existing and predictable hazards, and who has the authority to take prompt corrective measures to eliminate them (Goetsch, 2003).

Critical Incident Technique: Developed about fifty years ago by Flanagan, the critical incident technique is a qualitative research method used to identify when a job is being done ineffectively or incorrectly, and to identify the critical job requirements which are necessary for doing a job effectively (Hammer & Price, 2001).

Critical Thinking: A mental process of analyzing or evaluating information and forming judgments about the facts. It is a continuous process of creating and re-creating our personal, work and political lives by being in control of our thinking (Brookfield, 1987).

Hazard Analysis: A process of evaluating hazards within the workplace and making recommendations to change those hazards (Goetsch, 2003).

Hazard: A dangerous condition, potential or inherent, which can interrupt or interfere with the orderly progress of an activity (Michaud, 1995).

Injury: The result of an accident, such as a fall, cut or burn (Puckett, 2006).

Job Description: Defines the job in terms of its content and scope, and it should contain job identification information, job summary, job duties, accountabilities, and job specification or employment standards information (Bernardin, 2003).

Job Safety Analysis (JSA): An evaluation of associated required tasks to complete a job and the identifiable hazards associated with the tasks (Vincoli, 1994).

Likert Scale: The scale is named after Rensis Likert. A type of psychometric response scale instrument commonly constructed and used to measure opinion in survey research.

It is characterized by requiring the participant to answer questions by selecting from among choices that range from strongly agree to strongly disagree (Reynolds, 1993).

Multiple Intelligences: Various intellectual domains or abilities individuals make the most of to create meaning and perform within a situation. Howard Gardner proposes eight different ways to demonstrate intellectual ability. These intellectual abilities are linguistic, logical-mathematical, spatial, bodily-kinesthetic, musical, interpersonal, intrapersonal, and naturalist (Armstrong, 1994).

OJT: Refers to on-the-job training, a structured or non-structured system of training that occurs in the workplace (Rothwell and Kazanas, 1994).

Restaurant: A setting that often demands a single menu and a cafeteria where guests serve themselves, choosing from the offered foods. The range of menu selections depends a great deal on the institution's need, available monies, and the desires of those operating the cafeteria (Bocuse and Metz, 1991).

The Occupational Safety and Health Administration (OSHA): The federal or state agency assigned to monitor and enforce workplace safety (King, 1988).

Work Area: A room or defined space in a workplace where hazards might exist, and where workers are present; or that portion of a walking or working surface where job duties are being performed (Goetsch, 2003).

Workplace: An establishment, job site, or project, at one specific location, containing one or more work areas (Goetsch, 2003).

Safety Training: A safety training program devoted to prevent situations and behaviors that lead to accidents. The program's intent is to minimize risk and protect workers from harm (National Restaurant Association Education Foundation, 2006).

Limitations of the Study

In conducting the research, there were five limitations:

1. The availability of the information provided by the RRO.
2. The study involved only employees in the RRO.
3. The study did not include all employees.
4. The time frame of the study.
5. The development of this research may not reduce the number of accidents.

Methodology

The researcher intends to base the study on the results of direct observations, interviews, and a survey. The unobtrusive observation will take place in the work setting during operational hours; three volunteers will be observed, and the data documented. To this end, the critical incident technique will be employed. The interviews will take place on-campus but in a private office, and they will follow a structured interview process. The survey will be sent to random employees working in the Sandburg Café, The Palm Garden and Emporium of the RRO. First, the survey will be introduced in a letter to inform employees of the survey. Second, an on-line survey will be sent to employees. Thirdly, a follow-up e-mail will also be sent in an effort to increase the response rate. Lastly a thank you note will be emailed to all the participants. The

researcher will share the results of the study with the University of Wisconsin-Milwaukee Residential Restaurant Operation and participants who are interested in the outcome.

Summary

The purpose of this project is to research and supply information related to job safety within the Residential Restaurant Operation. This information will be used to help the operation implement a new way of observing possible job hazards and performance, perhaps through a safety program or a safety manual, in order to decrease accidents. This project will review the critical components of duties, tasks, and behaviors to highlight adequate and inadequate job performance; performance marked by a measure of safety awareness to prevent accidents specifically. This present chapter offered a brief introduction to this study's focus as it pertains to job safety. The study will continue by reviewing the relevant literature in Chapter II Chapter III will concentrate on the research method and will follow with a review of the study's results. It will then conclude with a brief summary and recommendations for the RRO based on the study's results.

Chapter II: Literature Review

The purpose of this chapter is to review existing literature both past and present.

Research began by reviewing journals, magazines, books and internet sites in the field of reducing accidents. Expertise and knowledge from these sources shaped and guided the research project. Topics researched included: definitions and history pertaining to the prevention of accidents through job hazards analysis; review and application of critical incident techniques; the theoretical and practical implications of multiple intelligences and critical thinking for safe, productive performance, safety and the field of safety manuals; and the relationship between the review of the literature and the research questions and methodology.

Definition and History of Job Hazard Analysis

The U.S. Bureau of Labor Statistics reports that the foodservice industry has some of the highest rates of employee injuries; cuts, burns, and falls cost employers billions. In 2000 there were 1,702,500 cases of injuries or illnesses related to work that involved days away from work (Bernardin, 2003). Even though accident reports are intended to aid in identifying problems, reducing accidents, and improving safety, there are still weaknesses in this method. Accident reports only refer to what happened, as opposed to why an accident happened, which makes identification of intervention and prevention strategies difficult. As a result, management has difficulties correcting the performance required for doing a task correctly and to prevent injuries. If employees do not know how to do a task correctly, accidents can easily happen. Lawson (1992) mentioned that one of the major causes of work-related accidents is the absence of adequate training. He suggested that safe operational procedures (S.O.P) should be incorporated into the worker's daily life from the start of their employment, which can be done so by adding these relevant S.O.P. into all safety programs. Therefore, job training, safety, and performance

need to be envisioned within continual, synergistic relations. Helping workers to understand safe operational procedures is inherent to performance – especially for organizations striving for a high level of performance and productivity with reduced accidents. To better understand how to reduce accidents or injuries in any occupation, it is now helpful to briefly review techniques that can prevent accidents.

Part of the training to prevent workplace injuries would be to review workplace operations, establish proper job procedures, while ensuring that all employees are properly trained, especially in reducing accidents. One of the ways to determine and establish proper work procedures is to conduct job hazard analysis (JHA). During the 1930s the steel industry was the one of the first industries to use JHA to identify serious and dangerous jobs in the steel plants. In the beginning of JHA most systems concentrated on the hazardous job rather than each specific job. Later, the focus of the JHA program was to analyze each job in each occupation in order to develop a safe working environment. The JHA programs will reduce injuries in any workplace. This is a multi-step process in which a job or task is broken down into basic steps. Each basic step is analyzed for hazards (Swartz, 2002). Then safe practices are developed to eliminate the hazards associated with each basic job step. The job hazard analysis process results in detailed written procedures for safely completing many tasks within the workplace (Bancroft, 2002). Ideally the best route to take in developing JHA is to involve employees. Next review the accident history, and conduct preliminary job reviews. In the preliminary review, a safety committee – including employees – should be formed; the project can be managed much better as a result. Take, for example, a new piece of equipment. The committee should initially examine the hazards of the new piece of equipment and ask questions; beginning with “what if” questions, for instance, keep the committee of employees and managers involved in developing

safe work procedures, and, as a result, hazards can be regularly identified and improved because, overall, employees will be more aware of how to safely perform a task with the given equipment. The other two steps involve, one, setting the priorities of hazardous jobs, and, two, outlining the specific duties and tasks for performing that job. The information describing a job hazard is useless unless it controls, measures, and reduces or eliminates risk factors. These control measures involve engineering, administrative and personal protection equipment.

Swartz (2002) states that job hazard analysis is based on the following concepts:

- A specific job or occupation should be put into a series of steps.
- The risk in each of those steps should be identified.
- Corrective action can be developed to control each of those risk factors within the steps (p. 28-29), (Appendix A).

In general, the purpose of the JHA is to analyze each job in each occupation within a facility in order to develop safe working procedures. One way to evaluate the JHA is to use a hazard sheet. (Appendix B) An advantage of administering a JHA is that a task can be broken down into smaller steps. These steps can be observed while the employee performs the task and the steps are identified along with risk factors. This job observation can continue until all the risk factors are identified. The last step is to provide ways to reduce or eliminate the risk factors. When the JHA is correctly in place injuries are reduced, employee and manager awareness is more apparent, a safer and more efficient work environment is produced, and hazards are reduced or eliminated (Swartz, 2002). Employees involved in the JHA can provide validity and reliability to the critical hazard in each step of the job. Moreover, they can use critical incident techniques (CIT) – their description of the situation, their actions or behaviors, and the outcomes of those actions – to help gather and analyze reports of incidents (Flanagan, 1954). A widely

used tool to better understand human errors and safety, the CIT is what the researcher will now turn to in order to review its relevance for this study in greater detail.

Critical Incident Technique (CIT)

The critical incident technique was developed during World War II by John Flanagan, then head of an aviation psychology program (Jonassen, Tessner, & Hannum, 1989). Flanagan analyzed actual incidents of success and failure in training and worked backwards to determine the specific behavior that led to positive and negative results (Flanagan, 1954). This technique is most associated with studies of human errors and safety. The relevance of the CIT – for an organization like the RRO – is to analyze and understand why there is an increase of accidents when employees perform tasks. A key purpose of the CIT is to observe performance and derive data and knowledge that can help the researcher to predict and control performance (Flanagan, 1962). It is important to predict and control performance so workers will accomplish their duties and tasks correctly, efficiently, and without accidents. The CIT, according to Flanagan, allows the researcher to collect direct observation of human behavior in such a way as to facilitate their potential usefulness in solving practical problems. To this end CIT should be used to collect data through observation, interviews, and surveys, as well as reviewing existing job descriptions, and by evaluating job hazards in order to identify why accidents occur. This collection of data is crucial for managers engaged in researching safety, performance, and accidents in the workplace. By collecting data on critical duties and tasks, it becomes much more possible to evaluate correct or incorrect behavior or problems, and then begin the process of identifying the causes of accidents. Furthermore, the CIT can help an organization or a manager to redesign specific job duties, implement new job training, and modify work areas or equipment for safe use. Therefore,

the CIT can help to create a safer and more productive work environment by identifying, correcting, and cutting down on accidents.

The basic premise of the CIT is that critical incidents will be inherently memorable to those working within a system, which means that they should be able to recall recent events or conditions recently observed that illustrate that the organization is doing an unsatisfactory job or there is something the organization needs to improve. They also ask the interviewees to recall evidence that an organization is doing satisfactory jobs (Witkin & Altschuld, 1995). To this end, it is relevant to consider as well how the critical incident analysis (CIA), as an interview technique, can facilitate the CIT. The CIA can be used to help individuals recall situations that pose serious injury potential and which have previously gone unreported or have been reported but not fully corrected. Resolving situations that can result in a serious injury identified during an interview becomes the responsibility of the manager performing the interview. The interviewing manager determines if the operations should continue, coordinates the corrective actions, reports the situation to overall management, and tracks the corrective actions to resolution. This technique has made a contribution to the reduction of human error, and it can also be used as an information collection tool for a range of other situations (Kirwan & Ainsworth, 1992).

As noted by Branch (2005), CIT was used to assess performance with medical students who were encouraged to participate in telling their stories in short narrative form and interviews that describe incidents judged to be of great importance to their profession. This technique was used to explore medical students' assumptions, and it was believed that critical incidents enhance learning by providing access to experiences that facilitate personal growth and transformative learning. Furthermore, critical incident reports promote reflective learning as well. The aim was for a better understanding of patient and professional, and, therefore, the behaviors that seemed

to contribute to an effective care outcome. In contrast, Flanagan gathered data with pilots to describe a set of procedures for identifying behavior that contributed to the success or failure of individuals in a specific situation. The CIT, therefore, is not an appropriate job analysis tool for every job. Rather, it is appropriate for jobs that have a flexible or indefinable number of correct ways to behave, like asking medical students and pilots to provide in-depth descriptions of specific events in order to gain an understanding of their thoughts, feelings, and behaviors during job performance. The CIT can certainly be employed to examine the higher order of critical thinking skills, and thus it is an important technique for considering the relations of performance and thinking during job performance. To better understand these relations it is beneficial to recall the five steps Flanagan advocated in conducting the CIT: (1) determine the general aim of the activity; (2) develop plans and specifications for collecting factual incidents regarding activity; (3) collect the data (either through interview or written up by the observer); (4) analyze, as objectively as possible; and (5) interpret and report on the requirements, particularly those which make a significant contribution to the activity. According to these steps, best practices can be met for improvements in the area's performance and thinking (Stitt-Gohdes, Lambrecht and Redmann, 2000, pp. 5-6).

There are particular advantages and disadvantages in conducting the CIT that should be considered (Jonassen, Tessner, and Hannum, 1999). First the advantages:

- The information obtained from this technique is reliable, relevant and valid. Numerous studies clearly demonstrate that.
- Criteria seem to be based on objective evidence. Incidents point out job behaviors that can be used to develop criteria for training programs.

- The technique provides criteria for the development of performance appraisal instruments that are based on actual behaviors observed.
- This method tends to be highly objective. Qualified observers' reports identify behaviors and the effect of that behavior.
- The method accounts for the variety and complexity of performance by classifying incidents. The different duties of a job are categorized based on reports and observations of the jobs as they are performed.
- Information gathered by this technique is very comprehensive.

Then these disadvantages are important to consider:

- The CIT is highly dependent on the qualification and training of the data collectors.
- Unskilled observers will distort the work of good data gathers and result in problems of reliable, relevant and valid information.
- Duties and tasks are essentially subjective. Experts cite the structuring of incidents within a framework of the job as a major hindrance to this method.
- Planning and conducting for the effective use of this technique requires greater time and money than other techniques.
- Objectivity will always be questioned by the manner or style of training provided to data collectors. This may affect the quantity, quality and content of incidents noted.
- Routine or average dimensions many times will not be identified with this technique.
- Only useful in domains in which expertise exists, and often obtaining access to experts is difficult.
- Data analysis is highly qualitative; few guidelines exist for analyzing this type of data.

- Interviews focus on challenging events to aid in identifying key cognitive elements; results are not comprehensive, therefore, and the knowledge represented may be not be perceived as straightforward (p. 189-190).

These advantages and disadvantages highlight the problems or degrees of “objectivity” and “validity” any qualitative research project encounters in gathering data. For the purposes of this study, however, the CIT engages in a form of objectivity necessary for a manager observing, locating, and documenting the valid nexus of job safety, performance, and productivity. By observing an incident, a concrete situation and performance, the researcher/manager has an occasion to collect data and knowledge useful in predicting and controlling job performance, that is, duties and tasks for optimum efficiency. The CIT, moreover, allows the researcher, through direct observation, to view problems in performance, be they because of doing task incorrectly, incorrect behaviors, improper use of equipment or utensils, or modifications needed to a work area or equipment. Furthermore, the CIT offers the researcher/manager an opportunity to interact with workers, through interviews and questioners, which are essential for understanding a worker’s decisions, which may be based on anecdotal information and memory, as well as psychological or cognitive factors, and the researcher/manager also has an opportunity to receive feedback on how tasks could be made more efficient. These distinctions highlight how much the CIT can help a manager to modify job behaviors and tasks, and then begin the process of implementing new training. These major advantages of the CIT, for this particular study, are essential when trying to understand the relations between critical tasks, performance, and accidents.

There are clearly disadvantages to the CIT, however. One is that in trying to be objective in observation there is room for error; the manager might, as any human might, mistakenly

observe an action or motive, and because the manager is interested in the most effective and safe job performance, they may over analyze and/or correct the observed performance and situation. Likewise, workers may try to answer questions as correctly as possible, given their perceptions of what is being asked and job or task guidelines, to facilitate the research, and thus not provide correct information about actual incidents. In addition, when workers know they are being observed, they alter the normal ways they complete tasks. Furthermore, the data coming from the user can get distorted due to timeframe, plus the data may be biased. Additionally, the CIT can be very time consuming.

Since 1954 many companies have used the CIT for needs assessment and task analysis, and the CIT has proven to be an effective measure in observing effective and ineffective behaviors performed on a job. Again, the CIT identifies the critical aspects of a job, the tasks or behaviors that affect job performance. It is a flexible set of principles rather than procedures, and it must be adapted to meet the specific situation. Moreover, there have been a variety of successful situations that have been explored by using this technique in order to identify and measure job proficiency (Flanagan, 1962).

Overall, the CIT will be quite effective for understanding why accidents are occurring in the workplace. It will be important for this study to recognize the key components of the CIT Flanagan (1954) described: a description of the situation, an account of the actions or behaviors of the employee during performance, and the outcome or result, and whether the actions were effective or ineffective. To this end, this study can better detail (especially through direct observation) what actions during job performance are completed and what actions are not completed, and, furthermore, how these actions contribute to workplace injuries.

To help strengthen the data collected in this study, as well as its conclusions, the CIT will be engaged in relation to other areas of inquiry and knowledge relevant to job performance and safety, such as action research, critical thinking, and multiple intelligences. The CIT is essential for this study, yet this method is subtly and importantly connected to these other areas, which the researcher presently turns to in order to understand how workplace accidents can be effectively reduced.

Action Research

Action research, as its term denotes, is comprised of practice and theory, and it might be best characterized simply as “learning by doing.” This is where a group of people identify a problem, make changes to resolve the problem, and, if they are not successful, they re-assess the process and begin another cycle. This process continues until the problem is resolved – by and through action. Action research stands out because it gets people involved that need to be involved in a real life situation. Carnevale (2003) has a more detailed and important definition to consider as well. Carnevale writes,

Action research is the process of systematically collecting research data about an ongoing system relative to some objectives, goal or need of that system, feeding these data back into the system, taking action by altering selected variables within the system based both on the data and on hypotheses, and evaluating the results of actions by collecting more data. (p. 73)

Although action research was developed to have focus on change and knowledge, it has been adapted into the practitioner’s efforts in which the major emphasis is on planned change. The practitioner carries out most of the changed activities, with the agreement and collaboration of the stakeholders. There are eight steps used when practitioners execute a planned change:

“problem identification, consultation with a behavior science expert, data gathering and preliminary diagnosis, feedback to a key client or group, joint diagnosis of the problem, joint action planning, action, data gathered after action” (Cummings & Worley, 2001, pp. 23-26). In general, these steps will help aid a cycle of action one undertakes: 1) to develop a plan of action to improve what is already happening; 2) to act to implement the plan; 3) to observe the effects of action in the context to which it occurred; and 4) to reflect on these effects as a basis for further planning, subsequent action, and to continue on through a succession of cycles (Herr & Anderson, 2005). These cycles of activities form an action research in which each cycle increases the researchers’ knowledge of the original problem with the likelihood of a solution. All in all, good action research contributes to theory and practice along with a better understanding of the individuals who have contributed to a problem’s solution.

Although there are a variety of action research models to implement, practitioners prefer to use the scientific knowledge of experimental and participant action research. This section will focus on the appreciative inquiry (AI), which incorporates people’s expertise and information to the situation, with combined resources, in order to learn how to change the organization. This approach is used when people focus their attention on when the organization was working at its best. That image helps motivate the people to input their knowledge into the decisions of the organization. The steps to follow in AI (Williams, 1996) include: “appreciating valuing – the best of what is, envisioning – what might be, dialoguing – what will be, envisioning – what will be” (p. 44). The AI approach is often worked out in practice by using the 4-D model: Discover: employees talk and think when the organization was at its’ best; Dream: employees envision when the organization was at its’ best; Design: employees find ways to create an organization that the team dreamed of; Destination: employees make sure implementation of change takes

place. AI delves into a more positive outlook of people, organization, and the world around us. AI can be incorporated when you work with a team on a group project, and during this work the team gets upset because every project worker is not pulling their weight. To help get the team members back on track, AI can be incorporated by having the team think of times in which they worked well together. The results can add a positive feeling that might be lost otherwise.

In summation, action research is about applying theory and technology of applied behavior science to improve the organization. To put this a little differently, action research helps individuals to reflect on the actions taking place or their own actions, helps them to begin to put in motion new actions, and then see how those actions can foster positive change and action. One must remember that to solve real problems action and research need to work hand and hand – “there is no research without action, and no action without research” (Carnevale, 2003, p. 74).

Critical Thinking Skills

Critical thinking skills (CTS) allow employees to envision their duties, tasks and performances in a nonlinear way while focusing on making decisions and solving problems. This is illustrated as to what a doctor does when a patient’s symptom is not addressed in the medical books. The doctor is faced with a problem, and since the medical books do not address the problem, the doctor works through it by drawing on similar experiences, by consciously turning to his or her experiences, feelings, and the important concepts and ideas that guide many of the doctor’s choices and actions. The issue is not resolved until the doctor tries and tests out various possible solutions. The doctor works through the problem using a mixture of knowing and doing. Critical thinking skills are closely related to Donald Schön’s (1983) “reflective practitioner,” and the attendant need for professionals and workers to “reflect-in-action” and “reflect-on-action.” Key to Schön’s ideas are the relations between theoretical and practical

knowledge, particularly out of our daily, “spontaneous” and “intuitive” performances (1983, p. 49). Furthermore, reflection on these performances, on actions, is crucial for knowing our actions and knowledge. Hence, the need for “reflection-in-action”: “It is this entire process of reflection-in-action which is central to the ‘art’ by which practitioners sometimes deal well with situations of uncertainty, instability, uniqueness, and value conflict” (p. 50). When an individual is engaged in reflection-in-action the following three states of knowing and action are present: 1) “thinking what they are doing and, in the process, evolving their way of doing it” (p. 56); 2) “reflection tends to focus interactively on the outcomes of action, the action itself, and the intuitive knowing implicit in the action” (p. 56); and 3) “they describe their own intuitive understandings” (p. 276), although this description does not need to be totally “complete or faithful to internal representation,” since an “excess of information” might lead to a disconnect, gap, and confusion that removes one from the situation (p. 277). The kind of description and thinking Schön is suggestion “feeds reflection” and helps an individual – Schön’s practitioner – to “criticize, test, and restructure his understandings” and actions (p. 277). Schön helps one to understand the relations of action and reflection more clearly when he writes:

Even when the action-present is brief, performers can sometimes train themselves to think about their actions. In the split-second exchanges of a game of tennis, a skilled player learns to give himself a moment to plan the next shot. His game is the better for this momentary hesitation, so long as he gauges the time available for reflection correctly and integrates his reflection into the smooth flow of action. And we have observed how practitioners like architects, musicians, and therapists construct virtual worlds in which the pace of action can be slowed down and iterations and variations of actions can be tried. Indeed, our conception of the art of practice ought to give a central place to the

ways in which practitioners learn to create opportunities for reflection-in-action. (1987, p. 279)

“Reflection-on-action,” in relation to reflection-in-action, is that time and space after an event or performance when a professional or worker reflects on their performance, discusses their performance, reviews tasks, or develops new ways of thinking about and doing that task in the future (p. 278). Schön gives the example of the baseball pitcher who seems to never reflect during the game, and yet is “happy to review films of the game in the privacy and safety of the locker-room” (p. 278). There is an essential relation between reflection-on-action and reflection-in-action; if reflection during a performance can help to sharpen one’s knowing action, then reflection following performance can only help to sharpen that knowing and action as an individual reviews what happens, slows down and stops the “film” of their actions in their mind, in conversation, or perhaps on paper, all the while beginning to discern and know the rightness and future possibilities of their actions even more.

Essential for thinking about performance, safety, accidents, and reflection is how Schön (1983) describes the reflective practitioner as “researcher,” as a practitioner who can theorize and know their actions because of reflection. Schön writes:

In each instance, the practitioner allows himself to experience surprise, puzzlement, or confusion in a situation which he finds uncertain or unique. He reflects on the phenomena before him, and on the prior understandings which have been implicit on his behavior. He carries out an experiment which serves to generate both a new understanding of the phenomena and a change in the situation.

When someone reflects-in-action, he becomes a researcher in the practice context. He is not dependent on categories of established theory and technique, but constructs a

new theory of the unique case. His inquiry is not limited to a deliberation about means which depend on a prior agreement about ends. He does not keep means and ends separate, but defines them interactively as he frames a problematic situation. He does not separate thinking from doing, ratiocinating his way to a decision which he must later convert to action. Because his experimenting is a kind of action, implementation is built into his inquiry. Thus reflection-in-action can proceed, even in situations of uncertainty or uniqueness, because it is not bound by dichotomies of Technical Rationality. (p. 68-69)

The kind of manager and worker this study argues for is a practitioner, a researcher, who can begin to engage their performances by bringing thinking and action together, by interactively and critically engaging the relations of means and ends, and who values a sense of inquiry in situations that become unique, difficult, and even uncertain. As a result, this manager and worker can begin to reflect-in and on-action to critically know their performances and do their tasks with greater safety.

Critical thinking and reflection is much more than a purely cognitive process of analysis and speculation – it is much more than a form of “Technical Rationality.” Instead, critical thinking and reflection-in-action is an artistic process (Brookfield, 1987, p. 155). During performance job workers are often faced with unexpected and unfamiliar situations they need to respond to. They need to look at the situation and use what has gone before; they need to engage in reflection-in-action so it becomes a part of the repertoire of experiences they use to build theories and responses from; and these theories and responses need to then become a part of future actions and reflections. Professionals and workers need to also engage in reflective conversation in order to have a better understanding of their own and each other’s thinking

processes. Not only are critical thinking skills important for workers but also for managers. The latter, especially managers, need to be reflective practitioners as much as workers. They need to spend time observing and reflecting on the processes which impact the workplace. Additionally, they need to be responsible for their reflection-in-action; otherwise they cannot teach others (Schön, 1983, p. 243). All thinking and practices demand a stop and think period of time – that is, reflection. Reflection, bringing knowing and action dynamically together, will lead to greater performance.

In the workplace critical thinking (and reflection) needs to be encouraged. One way critical thinking may be developed in the workplace is through the process of “double-loop learning,” which is defined by Argyris and Schön as when

Workers identify, question, and change the assumptions underlying workplace organization and patterns of interaction. Workers publicly challenge workplace assumptions and learn to change underlying values. Through confronting the basic assumptions behind prevailing organizational norms, values, myths, hierarchies, and expectations, workers help to prevent stagnation and dysfunctional habits. (Brookfield, 1987, p. 157)

It is key to guide employees in becoming double-loop learners through the four “alternating phases” of “discovery, invention, production, and generalization” so they can experience the progress and meaning of double-loop learning (Brookfield, 1987, p. 158). This process allows employee-learners to use critical thinking over a period of time while thinking inward to reflect critically on their assumptions and actions. The end result of double-loop learning is to increase effectiveness in decision-making. Double-loop learning is not about accepting change without questions, however; it is about questioning underlining assumptions and core beliefs. It is about

figuring why the thermostat is set too high or too low. Double-loop learning occurs when error is found and corrected in ways that involve the modification of an organization's underlying norms, policies and objectives.

Critical thinking can be defined as the process of analyzing or evaluating information and forming judgments about the facts. It is a continuous process of creating and re-creating our lives by being in control of our thinking (Brookfield, 1987). To this end, critical thinking, reflection, learning, and performance can be envisioned as an ongoing process of creation and recreation; and, as such, critical thinking becomes most critical when it is grounded in actions, performance, and within the reflection and learning an individual needs to approach future situations and tasks – and in the workplace setting this means without injury.

Multiple Intelligence

Since the early 20th century intelligence has been studied and researched, and mostly as a way to define intelligence quantitatively, to measure it, to understand what can be gained from intelligence, and to name the skills that make up intelligence. Understanding what intelligence can mean and what it can foster for teaching and learning is a prerequisite for significantly improving one's pedagogy. Howard Gardner's (1983) major tenets of multiple intelligences are revealed in the following compelling terms:

- Learning is culturally situated.
- Different communities value different forms of intelligence.
- Cognitive development is complex, not simply a linear cause-effect process.
- Creativity is an important dimension of intelligence.
- Psychometrics does not measure all aspects of human ability.

- Teaching grounded in psychometrically inspired standardized testing is often deemed irrelevant and trivial by students (Kincheloe, 2004, p. 4).

Multiple intelligence theories envision intelligence in non-traditional terms, and thus Gardner has defined intelligence as the “biopsychological potential to process information that can be activated in a cultural setting to solve problems and to create products that are of value in a culture” (Viens & Kallenbach, 2004, p. 3). As Viens & Kallenbach (2004) rightly point out, “Gardner’s definition locates intelligence in what people can do and the products they create in the real world, in contrast to intelligence implied by a test score. It suggests a qualitative expression, a description, of an individual’s collection of intelligences rather than a quantitative expression of general ability” (p. 3; my emphasis). Multiple intelligences tries to recognize what people create and do for the quality of life, to put this a little differently, rather than on the quantitative outcomes of a test. As Linda and Bruce Campbell (1999) suggest, Gardner’s defining of multiple intelligences, which “focuses on dynamic processes – problem solving and contributing to others” (p. 4), does not “limit intelligence to a static, quantifiable number. Instead, it frees teachers from concerns of whether intelligence is genetically determined at birth to creating environments and instructional methods that develop all children’s [and students’] competencies” (p. 4). Campbell and Campbell go on to highlight the fact that Gardner’s “definition emphasizes the cultural relativity of what is considered ‘intelligent behavior’ and expands teachers’ appreciation of diverse value systems and behaviors” (p. 4-5).

These particulars go beyond issues concerning teaching and schools – they are, in fact, equally pertinent when considering job performance, safety, production, and a continued process of learning and action for greater performance. It is not so much the rules, procedures, or regulations one puts in place that prevents accidents. Job performance cannot be viewed in

linear, cause and effect terms. Job tasks, performance, and safety have to be envisioned as overlapping domains, as part of a complex, dynamic, actively related process. Often workers do envision their duties and tasks as linear, though. What Gardner's (1999) theories of multiple intelligences suggest, however, is that workers can begin to cognize the various forces at work in a specific situation, for a particular task; they can begin to process how they creatively engage that task and situation from various intelligences or aptitudes; and they can begin to do so because their active, critical, and reflective engagement in performance is meaningful and filled with quality – and precisely because they are actively engaged with their performance.

Pedagogies grounded in theories of multiple intelligences can enable students to understand their intellectual strengths and weaknesses within situations that require them to make meaning – and for workers this means situations that require them to make meaning and perform. To understand “how you are smart” Gardner (1996) proposes eight different ways to demonstrate intellectual ability. These intellectual abilities are

- Linguistic intelligence, or word intelligence and abilities.
- Logical-mathematical intelligence or number/reasoning abilities.
- Musical intelligence or musical ability for creation and understanding.
- Spatial intelligence or picture perception and creation.
- Bodily-kinesthetic intelligence or bodily skills for expression and goals.
- Interpersonal intelligence or people perception and understanding.
- Intrapersonal intelligence or self-awareness emotionally.
- Naturalist intelligence or natural recognition and classification (Guignon, 1998, p.1-2, and Weber, 2005, 4).

These eight intelligences suggest that once an individual understands ways of learning, he or she will need to use specific strategies to best engage their ways of learning. For example, if you are a visual learner, you could use a highlighter when reading a textbook. The bright color would appeal to your artistic sense and help you concentrate on the reading and to see or “picture” relationships of meaning. We all learn best in many different ways because of multiple intelligences; they will help us to know our learning style (which is how we take in knowledge, skills and feelings). Most people have the ability to develop skills in each of the intelligences Gardner proposes, and to learn through them. However, most education emphasizes two ways of learning: logical/mathematical and verbal/linguistic, which disregard many other possibilities or intelligences for learning. Clearly, Gardner expanded the concept of intelligence to also include such areas as music, spatial relations, and interpersonal knowledge – and he did so in addition to mathematical and linguistic ability. In engaging multiple intelligences in the classroom, as both a pedagogical and learning style, teachers can show students how to use their more developed intelligences to assist in the understanding of a subject that normally employs their weaker intelligences.

Gardner’s theories on multiple intelligences are very persuasive, particularly how each intelligence does not have to be isolated or considered autonomous – and, moreover, how our multiple intelligences can help us to participate more fully in the world. Gardner (1999) believes that these intelligences have qualities we can tap into individually or together, and they have great effect for the productivity of our lives in society. We engage multiple intelligences in variety of settings and situations, therefore, in our homes, in the workplace, going across town on an errand, and, of course, at school and for learning (p. 3-4). These grounded theories of multiple intelligences can enable employees to understand their intellectual strengths and weaknesses

within situations that require them to make meaning. Employees should not be defined only by their logical and linguistic ability, nor should employees be defined as intelligent or unintelligent. Instead, employers should try to understand and foster the multiple intelligences employees bring to the workplace, and thus a productive workplace should be open to these intelligences. Gardner believes everyone is born possessing “eight intelligences,” and thus students enter a classroom with a different set of developed intelligences. Furthermore, Gardner does not like the idea of labeling students; instead he looks at building on strengths not deficits. Hence Gardner’s definition of intelligence (1996) has “the capacity to solve problems or to fashion products that are valued in one or more cultural setting” (Gardner, 2002, videotape). “It’s not how smart you are; it’s how you are smart,” he tells us (Gardner, 2002, videotape).

Gardner’s (1996) definition of the eight different intellectual abilities also allows the researcher to come to terms with different ways of learning, and they offer a stronger sense of self as an active participant in learning and the making of meaning. We all have the eight intelligences but some intelligences are stronger than others. Given the complexity and possibilities of these rich intelligences, multiple intelligences are perfect for creating an effective pedagogy or training program. People are not born with a fixed intelligence, and intelligence does not just consist of ability in logic and language. Individuals have varying degrees of multiple intelligences, and thus one method of curriculum cannot be taught to all. The researcher needs to assess employees on the basis of individual intellectual strengths and weaknesses, and they need to access an individual’s multiple intelligences as learning and meaning emerges for them within the dynamic of task, performance, and the reducing of accidents. In retrospect, people have different types of intelligences – and experiences or contexts – they bring to their learning, and as a result a pedagogy based in multiple intelligences can better recognize these

various experiences, contexts, and intelligences. Multiple intelligences can help a manager develop an effective safety program for both novice and expert food service employees, while fostering new ways of learning and knowing and doing that encourage the multiple, diverse intelligences workers bring to their job performance.

Safety Manual Program

Every day approximately 80 million Americans go to work. All these workers are exposed to some risk of injury and illness during their work hours (Saccaro, 1994, p. 2). “According to the U.S. Occupational Safety and Health Administration (OSHA), more than 40,000 disabling injuries and 200 deaths occur in offices each year” (Saccaro, 1994, p.5). The second largest claims come for repetitive motion injury. In food service the most common problems is back pain and injury (Bass, 1992, p. 87). The purpose of the safety program is to eliminate risk. Although a safety program cannot eliminate risk, they can go far to reduce it. Every employee – even experienced workers – needs to go through a safety program to ensure competencies are kept current with department standards, which is an ongoing process. A comprehensive safety program can be designed to teach employees the correct safety procedures and safety requirements for a job. The employees can take corrective safety measures to prevent unsafe practices when performing a task, while, at the same time, creating an environment where employees are not injured when performing a job. Moreover, these safety programs must follow occupational safety and health act (OSHA) guidelines as well. A safety program is successful to the degree that each worker leaves the job unharmed. Safety training is an important part of an overall job training program. Safety training is essential. It is part of the safety program that is devoted to modifying the behavior of the worker in order to minimize risk. However, safety

training is only effective when all the other elements of an occupational safety training program are in place. This way all parts can work together to reduce accidents (Saccaro, 1994, p. 3).

A significant indicator for the overall health of organizational safety is measured by safety records (Appendix C). As one safety officer stated, “We know that safety is a clear cut barometer of organizational excellence” (Saccaro, 1994, p. 3). There are many techniques helpful in monitoring safety. As stated previously a food service safety inspection can maintain preventative maintenance along with the use of a safety check list which can help identify safety risks before an accident or injury occurs (Appendix D). Additionally, a food service hazard identification card can be implemented so everyone in the organization takes ownership in maintaining a safe environment. The form can include building, area, date, unsafe act and conditions with comment section (Bass, 1992, p.116). The second is system safety, which is a thought process during each stage of the project. System safety is needed to find out if people are trained to operate equipment, if human limitation and comfort were considered, and what type of protective equipment was specified (Michaud, 1995, p. 73). Also, a systematic plan needs to be in place to review current safety needs to see what is working and what needs modification. This plan needs to be reviewed continuously (Appendix E). Safety needs to be a collaborative effort with managers and employees. Lastly, there is a four step process to consider when evaluating safety in the workplace. The first is to gather a team who is involved in the process, responsible for the change or future decision about the change. The second is to gather data about the defined problem from focus groups, records, interviews, etc. The third step in the process is to analyze the collected data. The final step is to share the results with those affected by any changes. The more the employees are informed the more it will support the efforts of change in the workplace.

To help guide this process a safety training mission needs to carry out the following steps in order to be successful: Determine if training is needed, identify training needs, identify goals and objectives, develop learning activities, conduct the training, evaluate program effectiveness, and improve the programs (Saccaro, 1994, p. 19). One journalist, for example, described a company's successful safety program in these terms, "The process got off to a running start when they realized that the methods they had been using to improve quality could be applied to safety as well" (Saccaro, 1994, p. 19). A safety program should address the critical elements in a successful program which include: employee involvement, management leadership and support, assignment of responsibilities, maintenance of safe working conditions, establishment of training program, an accident record and investigation system, medical and first aid program, and acceptance of personal responsibility of employee (Michaud, 1995, p. 147).

Evaluation can be a complicated process, of course, especially in making important decisions about safety. Part of what is involved in working beyond the complicated process is to see it as a continuous process needed to improve workplace safety in any organization. Evaluation should not occur once an accident occurs; evaluation is needed from the start the moment an employee begins to learn a job. Evaluation should not be considered separate from job skill training. They should be one and the same (Michaud, 1995). Evaluation, safety, and performance should be brought together as essential. To help guide this process a guide plan needs to be enforced along with monthly safety meetings to ensure the operation is performing within standards (Appendix F). The way to reduce occupational risk to an acceptable level is to ensure that workers have the skills, attitude and equipment necessary to do their job safely. The hazards need to be controlled and the risk levels must be acceptable to the workers themselves and other regulatory agencies.

Summary

This project's literature review reveals research on reducing accidents by considering how the critical incident technique can help a manager (or organization) comprehend the active relations of duties, tasks, and performance with regards to proper and improper performance; and especially with regards to safety and accidents. The review concentrated on the theory and practices of action research, critical thinking skills, reflection, and multiple intelligences – how, in relation to the CIT, these theories and practices can become a part of an organization's goals for improving better ways of thinking and performance so accidents are reduced. This research shows positive impact on workplace learning for preventing accidents for the employers and employee. Lastly, this review takes into consideration the need for a safety program to help workers develop safety awareness and take the correct ways to prevent unsafe practices when performing a task or several tasks, and to create an environment in which workers are neither injured nor made ill by the work they perform. Overall, this safety manual program needs to support the understanding of safety within the organization. At the same time, employees need to use critical thinking skills to reflect on safety and take corrective action measures to prevent accidents when performing tasks. Furthermore, the employer needs to provide continuous and consistent follow-up procedures in all areas of safety within the workplace, through daily observation and safety training, in order to make sure working conditions are safe. As the Residential Restaurant Operations at the University of Wisconsin-Milwaukee continues to grow injuries may continue to rise, as will production costs. The data from this study, however, can help to foster ways of knowing and performance that reduce injuries, heighten better job performance, and contribute to greater productivity and quality.

Chapter III: Methodology

The purpose of this thesis is to determine why an increase of work injuries is occurring in Residential Restaurant Operations, and to suggest ways to reduce those injuries. The department is experiencing an increase of accidents in the food service area, which are endangering staff and increasing departmental cost. To understand why work injuries are occurring and how to reduce them, the following methods and procedures will be used in this study and they will be explained in this chapter under the headings of (1) problem statement, (2) research objectives, (3) subject selection and description, (4) research design, (5) instrumentation, (6) data collection procedure, (7) data analysis (8) limitations, and (9) summary. Lastly, at later date, when the data is tabulated, a description and explanation of the data collection and analysis will be given.

Problem Statement

The problem of this study is to determine what can be done to bring a reduction of accidents in the food service department. Part of this research examines John Flanagan's critical incident technique through direct observation and interviews. To find the critical component of duties, tasks, and behaviors which are necessary for job performances that are adequate and those that are inadequate, while taking into account proper safety measures to prevent work injuries. Additionally a survey will be distributed which will highlight knowledge and skill of employees as well as what participants opinion on department safety.

Research Objectives

The objectives of this study are as follows:

- To identify duties and tasks performed by employees.
- To identify critical job requirements to be able to do the job effectively without accident.
- To identify any job hazards contributing to accidents.

- To identify a safer, productive workplace through the incorporation of job training, the redesigning of jobs, and the redesigning and/or replacement of equipment that is unsafe.
- To identify how multiple intelligences, critical thinking, and reflection can contribute to a safer, productive workplace.
- To identify a need for a safety program and manual.

Subject Selection and Description

Prior to data collection, the researcher will host a meeting with current Residential Restaurant Operations employees. At this time, the researcher will discuss the purpose and objectives of the study and the procedures that will be used to collect the data needed. The researcher will explain the process of direct observation, interviews and surveys that will take place within the department. The researcher will ask for three volunteers who will be observed while performing their normal job task at their workstation. The researcher will then discuss the voluntary consent forms applicable to this study to ensure the participants absolute confidentiality of any information submitted by them. Lastly the researcher will supply the results to those interested at the end of the study will be done to inform employees of the outcome.

In the population sample there are presently 28,000 students enrolled at University of Wisconsin-Milwaukee. For this research project the department of residential restaurant operation was researched. In this study the stratified random sample used for the survey study was 160 RRO employees. However, in the observation only three employees will be involved, in the interview a random sample of the current or prior injured employees will be interviewed, and, lastly, the survey will sample employees in Residential Restaurant Operation.

Research Design

The literature review highlighted the importance of the critical incident technique and critical thinking skills, and these reviews led to the design of research. The research methodology of this project is qualitative in nature and descriptive. The data will come from three separate sources. First, unobtrusive observation will take place in the work setting with three volunteers in the Residential Restaurant Operations. The observation will be done for each participant for a total of two hours, twice a week, and for two weeks. The researcher will observe participants performing tasks, and note whether or not safety issues are a concern. Second, there will be a face-to-face structured interview based on interviewees selected randomly from past injured employees in the RRO. This format will require a formal set of objectives to guide the interview process. The number of questions will be limited so that the interviews can be conducted in a maximum of one hour. Note-taking techniques will be used to record responses. Third, there will be a detailed survey distributed randomly through email to RRO employees working in the RRO department. The designed survey will be used to identify ways to reduce accidents in the workplace. The questions are designed so that survey participants can evaluate each question through their level of knowledge by using the Likert scale survey. The collected data will enable the researcher to generalize the findings from the sample of responses.

Instrumentation

According to Sproull (1995) there are four types of data collection methods:

1. Interviewing (interviewee, researcher).
2. Instrument administration (questionnaires, attitude scales, and tests).
3. Observation (person, researcher).
4. Examination of documents, materials, and artifacts.

In this study the researcher will use three types of instrumentation for the purposes of this study: observation, interviews, and a survey.

Observation

The first type of instrumentation for this research is unobtrusive observation. There are two types of observation – unobtrusive observation and obtrusive observation. In this study research was conducted through an unobtrusive observation approach for the following reasons:

- The researcher used this method of observation to make sure it did not affect the task performance.
- The researcher observed multiple employees at one time.
- Employees are working in a high demanding fast-paced environment (Russett, 1987).

Throughout this process observational documentation will be made. There are many advantages in using documentation, such as:

- Quickest and least expensive method for obtaining information.
- Documentation of some sort is widely available for most hardware, software or other systems.
- Well-written documentation contains an entire instruction program, facilitating the instructional development as well as task analysis of training.
- Complements other data collection methods (interviews, surveys) (Jonassen, Tessner, & Hannum, 1999, p. 239).

A direct unobtrusive observation form (Appendix G) will be used to record duties/tasks performed by employees on the job as well as safety measures. The objectives used for the observation are as follows:

- Objective A: To identify duties/tasks performed by employees.

- Objective B: To identify critical job requirements to do the job effectively without accidents.
- Objective C: To identify any job hazards contributing to accidents.
- Objective D: To identify a safer, productive workplace through the incorporation of job training, the redesigning of jobs, and the redesigning and/or replacement of equipment that is unsafe.
- Objective E: To identify how multiple intelligences, critical thinking, and reflection can contribute to a safer, productive workplace.
- Objective F: To identify a need for a safety program and manual.

Interviews

A structured face-to-face interview (Appendix H) is conducted. The interview has a total of twelve questions. These conclusions will then return back to the data as part of the data collection process. There are many advantages to interviews:

- Interviews build personal relationships.
- The respondent is allowed opportunity for expression and for revealing attitudes and feelings.
- The interviewer can add probes to the main questions and solicit information on causes or contributing factors to the need or issue.
- The interviewer can observe and record nonverbal behaviors.
- Interviewer can obtain a higher rate of participation than through a mailed survey (Witkin & Altschuld, 1995. p. 149).

Surveys

The final pieces the researcher prepared were a survey, notification letter, cover letter, and a follow-up email (Appendix N-R) developed from knowledge gained from the literature review. These survey results should indicate what will need to be altered to decrease the number of accidents. An on-line survey will be created to gather information to analyze and understand why there are a large number of accidents with employees when they perform and complete tasks. A Likert scale was selected to assemble the information on specific aspects of the safety (Lee and Nelson, 2006). A survey has many advantages:

- They can reach a large population.
- They are inexpensive.
- They can include many questions.
- Data can be collected more efficiently.
- Respondents can be anonymous.
- As a structured instrument a survey offers less opportunity for sidetracking and irrelevant information than do group interactive processes (Jonassen, Tessner & Hannum, 1999, p. 25, Kirwan & Ainsworth, 1992, p. 64-65).

The objectives for the survey were written to collect information on employee's knowledge, skill and the needs for workplace safety. The objectives were used as the base for the survey questions. The objectives used for the survey are as follows:

- Objective A: To understand the importance of safety.
- Objective B: To determine a need for training and safety manual.
- Objective C: To identify any job hazards in order to identify why accidents occurred.

- Objective D: To identify a safer productive work environment by incorporating job training, redesigning job duties, and/or the installation and operation of proper and safer equipment.
- Objective E: To understand how to report any hazard, job-related injury or illness.

The questions were listed from the most to least interesting to encourage the participants to complete and return the on-line survey. The survey was titled “Safety for Thought” to create interest and heighten the return rate.

The first letter will be letting the selected group know that a survey will soon arrive and their input is necessary for the completion of the project. The second letter, the survey cover letter, will be written to target the audience of UW-Milwaukee Residential Restaurant Operations working in Sandburg Café, The Palm Garden and Emporium. The follow up e-mail is shorter and encourages the employees to take the opportunity to complete the survey.

Pilot Study

A pilot study will be done prior to distributing the survey electronically to the employees. The pilot study will consist of six people. They will review the notice letter, cover letter and survey. Two of them will be restaurant leaders, two of them will be restaurant managers, and the remaining two will be restaurant employees. The researcher will administer the survey and feedback from the pilot study to determine positive or negative feedback. The participants are to decide if the questions related well to the objectives or if there were any modifications as result of the pilot study. The completed survey will be designed as a web survey. The format will be clear and concise with readable directions. However, before the web survey will be sent out, a personal notification letter will be sent out. If there is little response, a modified e-mail request

will be sent out to encourage more participation. These survey results should indicate what will need to be altered to improve the number of accidents.

Procedures

For this project the focus was on the Residential Restaurant Operations employees; the intention was to determine a way to reduce accidents in their work area, and, as a result, increase efficiency and productivity. An accident is “any unexpected or unforeseen occurrence” (Kuhlmann, 1985, p. 7) and “an unplanned event that may or may not result in damage, loss or injury” (Taylor, Easter & Hegney, 2004, p. 5). An accident interrupts or interferes with the orderly progress of the activity in question. If an activity is properly planned it can help eliminate accidents from occurring, though in the past food service has been known to perform “by the seat of our pants.” The food industry, however, can no longer function with this model. Active planning in every part of the job, including preventive measures for safety, is needed.

Because accidents are a major concern, the critical incident techniques (CIT) was incorporated to help analyze and understand what tasks are critical for production employees to do their job effectively, and if doing tasks incorrectly contributes to accidents and injuries. Although the definition of a critical incident has somewhat changed over the years, there is still a need to use the traditional CIT because of its origins in techniques. Again, as developed by Flanagan about fifty years ago, the CIT is a very useful tool for analyzing and collecting data from concrete, specific incidents, an activity or performance that is complete in itself and observable. If an employer, the management discerns a problem in performance that requires attention, the critical incident technique is ideal for observing the incident, scrutinizing the performance, and inferring what is critical for the activity to be efficient. Flanagan first described this technique as “a set of procedures for collecting direct observations of human behavior in

such a way as to facilitate their potential usefulness in solving practical problems and thereby to develop broad psychological principles” (Flanagan, 1954, p. 1-2). The CIT “outlines procedures for collecting observed incidents having special significance and meeting systematically defined criteria.” As suggested earlier, the CIT is used to look for the cause of the problem to minimize dangerous activities. The CIT usually requires the participant to respond by explaining what is being described or recommending an action to be taken (Lee & Nelson, 2006, p. 119). Data will be collected through a Behavioral Observation Sheet (Appendix G), which includes qualitative descriptions and details, in order to do the CIT. Lastly, a model will be developed that fits the background, philosophies, knowledge and interest of the research paper. The model will be selected to help visualize the complex process to see how the parts fit together (Appendix I).

In addition to the CIT, a task analysis and a list of job hazards will be incorporated as well. Data on task analysis is critical in identifying the procedures that contribute to the success or failure of individuals in a specific situation. A task analysis of the production employees will be constructed. A task analysis is a systematic process that involves breaking an actual job down into a set of logically related tasks required for successful completion of the job (Martin, 1977, p.18). In the process of data collection for a task analysis, observation will be used and an error analysis included. A specific sample of the task analysis will be gathered from the cook’s preparation of onions *mise en place* (MEEZ ahn plahs), a French term for having all your ingredients measured, cut, peeled, sliced, and grated before beginning to cook a dish. The analysis will also include the job broken down by task (Appendix J), and a task analysis for dicing onions (Appendix K). In collecting data for the task analysis, the employees will be observed when using a product to determine all of the errors that individuals might make while using it. Thus, the production cook and production activities and behaviors are to be under study.

The unobtrusive observation method will be applied. In observing production employees, it is important to refrain from explaining the design of the method or ask questions, which is difficult to do. Before the observation, the tasks are broken down to determine which particular step or steps appeared to be responsible for the excessive injuries. The safety precautions, how the safety equipment is used and all safety-related actions will be recorded during the observation. The safety analysis worksheet will be used to guide the sequence of steps, potential hazards and preventive measures taken. The data will be recorded on a log, and then will be checked for any similarities.

The next data collection process will be conducting interviews, and though there are a number of interview techniques to use, the structured interview technique will be utilized. The intent in employing a structured interview technique is to gather facts and opinions held by the injured employees who are familiar with the situation being analyzed. The employee will be asked to describe incidents in terms of the circumstances preceding the event, what exactly was done and why was it effective or ineffective, what was the outcome or result of the behavior, and whether the consequences of the behavior were under the employee's control. A pilot test will be administered by three subject matter experts (SME) to evaluate the reliability and validating of the interview questions. The results highlight and chronicle the order of questions, and to help keep the questions simple and brief. The following questions are created to help guide this process, and the production employees will be asked to think about what was happening when they were performing a task, such as de-boning chicken. After the interview is completed the data will be collected, and a report will analyze the results. A prepared thank you letter will be completed and sent.

In addition to direct observation and interviews, a survey will be created to gather further data. Consent forms (Appendix O), notice letter (Appendix P), cover letter (Appendix Q), follow-up letter (Appendix R), along with the Likert scale survey, will be distributed via e-mail, and then these instruments of the survey will be followed by thank you letters (Appendix T). Though there is a total population of 256 RRO employees, a stratified sample of 160 will be administered to encompass RRO employees. The survey is used to delve more into employees' knowledge on safety and other tools used to reduce injuries. The survey, moreover, helps to produce statements that can help to identify and measure employee knowledge on safety and possible preventive measures. Also, as safety measures are performed by the employees, the redesign or the purchasing of new equipment can be considered as well, in order to determine preventative measures to reduce accidents.

Instrument Validation

The survey was validated by presenting the instrument to six industry professionals and to the research advisor. So far the result will lead to some or no changes in the instrument.

Data Collection Procedures

The instrument used will be approved by subject matter experts in the industry prior to its distribution. The survey will be emailed to the randomly selected subjects with a cover letter. This letter will include the direction about the email survey and the website address will be provided as well. For the purposes of anonymity, a completed survey on-line will be sent into the system; and the system will tabulate the answers to the questions. The researcher will not apply for grant monies from University of Wisconsin-Stout to conduct data collection. In an effort to attain a higher response rate, a follow-up email will be sent out approximately two weeks after the initial email.

Data Analysis

The research data will be electronically evaluated in detail and will be included under results in chapter IV. The mean and standard deviation statistical methods will be used to analyze the survey data. Comparisons of the different responses will be viewed and conclusions made.

Limitations

This study has several limitations:

- There is no guarantee that the survey will be returned by the participants, thus the rate of response is unknown.
- This study is only intended to include the employees of the Residential Restaurant Operations at the University of Wisconsin-Milwaukee.
- The researcher produced the survey instrument.
- Due to time constraints, only residential restaurant employees will participate in the study.

Nevertheless, this is a worthwhile study that can definitely contribute to the RRO becoming a much safer and productive workplace, while sharing data that will help other organizations understand the relations of performance, safety, and productivity.

Summary

The data collected will help to analyze and determine how jobs, duties, tasks, equipment, barriers, and behavior can be modified or removed in order to foster a more productive and safe work environment. This data will help to foster a more comprehensive understanding of how multiple intelligences, critical thinking, and reflection can become part of employees' performative repertoires as they take greater control of the production, quality, and safety they engage within the RRO. The data is, therefore, important in conceiving of a safety manual and

the implementation of ongoing employee education with regards to performance and safety. The data collected can become part of a comprehensive production and safety program that helps the RRO understand how multiple intelligences are essential for creating a safer work environment, while helping employees do their duties with gained productivity and quality. Finally, the data can also help the RRO become a more reflective and critical organization, and thus this data can foster an environment where reflection on critical learning and action research, within job duties and as form of ongoing growth and productivity, offers employees important skills to better identify why safety is critical for the productivity and success of the RRO.

Chapter IV

Results

Introduction

In 2004 there were 4,257,300 recorded cases of nonfatal injuries and illness in just the private industry (U.S. Department of Labor Bureau of Labor Statistics, 2001), and in the food service category of mishaps, “slips and falls, on a wet floor, icy sidewalk, or climbing ladders or steps has resulted in more than one million hospital emergency room visits annually in the U.S., with 300,000, disabilities and 1,400 deaths (Katsigris and Thomas, 2006, p.219). Even though accident reports are intended to aid in identifying problems, reducing accidents, and improving safety; there are still weaknesses in this method. Accident reports only refer to what happened, they do not distinguish why an accident happened, which makes identification of intervention and prevention strategies difficult. As a result, employers and management have difficulties helping the employees perform adequately, which is mandatory in order to prevent injuries. If employees do not know how to do a task correctly, accidents can happen while performing the task.

The purpose of this field problem study was to find out how to reduce then number of work injuries the RRO department. There were three methods used to understand why work injuries are occurring and how to reduce them, the following three methods were used: 1) direct observation, 2) interview, 3) survey. The direct observation was conducted by monitoring three employees. The observation took a total of two hours; thirty minutes twice a week and for two weeks. The researcher took notes on the employees’ behavior, tasks performed, and proper equipment usage. The second method involved interviews of previously injured employees; a random sample of 10 were selected from various injuries including slips, falls, cuts, burns, scald, electric shock, and repetitive motion injures. The interviewer set aside one hour for each

employee, however, it only took approximately 15-25 minutes to conduct. The goal was to determine how to reduce accidents while performing a job. The objectives of the direct observation followed the first three listed below, and the interview highlighted the last three. The result was to answer the following objectives:

- To identify duties and tasks performed by employees.
- To identify critical job requirements to be able to do the job effectively without accident.
- To identify any job hazards contributing to accidents.
- To identify a safer, productive workplace with the incorporation of job training, the redesigning of jobs, and the redesigning and/or replacement of equipment that is unsafe.
- To identify how multiple intelligences, critical thinking, and reflection can contribute to a safer, productive workplace.
- To identify a need for a safety program and manual.

The results of the direct observation will be discussed and the interview questions will be shown on a table. The findings will be presented and then discussed in the analysis section. The last method involved a detailed survey that was distributed to 160 employees of the RRO. The survey consisted of three sections with a total of 20 questions that each participant responded to using a Likert scale survey. The first part of the survey consisted of 10 questions which did address the employees' safety knowledge. In this section the employees have a choice between three answers, one being correct. The second section was where the employees rated the survey for each of the statements by circling 1-5, one meaning that they strongly disagree, two meaning they disagree, three meaning they were undecided about the topic, four meaning they agree and five meaning they strongly agree. The third section will highlight demographic on the RRO employees. Data collection in the first part of the survey consisted of a three-phase format, the

second part consisted of a five-phase format. The following decision table was used for analysis for the data in part one of the survey (Section A).

Figure 1: Decision Table for Section A

Mean (X)	Standard Deviation	Reliability	Decision
2.1 – 3.0	< 1.1 > 1.1	High	Exclude
1.1 – 2.0	< 1.1 > 1.1	Moderate	Question
.1 – 1.0	< 1.1 > 1.1	Low	Include

The first was a personal letter consisting of a pre-notification letter from the researcher explaining that employees would be receiving an e-mail with a survey attached in the upcoming weeks. The letter explained the purpose, importance and how the data would be an anonymous and confidential part of the survey. The second mailing was sent two weeks later and consisted of a cover letter from the researcher explaining both the purpose and importance of the survey. The third was a follow up email to remind the employees to fill out the survey. The last was a thank you letter to the employees who had returned the survey. The responses from the employees were used to meet the objective of the study:

Objectives:

- Objective A: To understand the importance of safety.
- Objective B: To determine a need for training and safety manual.

- Objective C: To identify any job hazards in order to identify why accidents occurred.
- Objective D: To identify a safer productive work environment by incorporating job training, redesigning job duties, and/or the installation and operation of proper and safer equipment.
- Objective E: To understand how to report any hazard, job-related injury or illness.

The research gathered the data and the results of observation; interview and survey are in the summary section.

Item Analysis

Many companies have used the CIT in needs assessment, task analysis which has proven to be effective, measuring effective and ineffective behavior performed on a job. An advantage to the CIT is that it is very objective. To this end, the researcher is observing an incident, a concrete situation and performance, in order to collect data and knowledge to predict and control performance on the job, that is, duties and tasks for optimum efficiency. The CIT, moreover, allows the researcher, through direct observation, to view problems in performance, be they because they are doing tasks incorrectly, displaying incorrect behaviors, improperly using equipment or utensils, or modifications needed to work areas or equipment. Furthermore, the CIT offers the researcher an opportunity to interact with workers, through interviews and a questionnaire, which is essential to try understand the decisions – perhaps based on anecdotal information and memory, as well as psychological or cognitive factors – workers make, while also receiving feedback on how tasks could be made more efficient. For the latter, this highlights the fact that CIT can help managers to modify job behaviors, tasks, and implement new training to this effect. The CIT identifies critical aspects of a job, task or performance of behavior that affects job performance. It is a flexible set of principles rather than procedures which must be

adapted to meet the specific situation. Moreover, there have been a variety of successful situations that have been explored by using this technique in different uses such as measuring proficiency which have contributed to identify objective measures of proficiency on the job. This was illustrated with Gordon's study on the development of a standard flight check with airline pilots to measure the proficiency. Additionally, it is important to make sure the five steps of Flanagan are implemented throughout the situation. Overall, this method was an effective technique used to find out why an increase of accidents were occurring in the RRO particularly with the present employees. It was through the plan and specifications of the research being observed to find what was being done and not being done which led to increased injuries. To help with this process data was gathered, analyzed and a report was fostered to find a solution to the increase of injuries with a production employee and two cooks. The appendix highlights the job description of the observed employees (Appendix L). Before the observation, the tasks were broken down to determine which particular step or steps appeared to be responsible for the excessive injuries. The safety precautions taken, how the safety equipment was used and all safety-related actions were recorded during the observation. The safety analysis worksheet was used to guide the sequence of steps, potential hazards and preventive measures taken. The data was recorded on a log and was checked for any similarities.

Overall, through the direct observation, it was detected that there were discrepancies that occurred according to standards and with all the data; a resolution to reducing accident was solved by using CIT. Moreover, this section of the research project was effective because the analysis was performed during the past couple of weeks. The researcher was able to rely on the memory of an incident on different conditions which were faced by the job incumbent. The researcher was able to gather a set of factual incidents to use in identifying behaviors that

contribute to the success or failure of an individual in a specific situation. In observation of the employees, it was important to refrain from explaining the design of the method or ask questions, which is difficult to do. The researcher found that this took some time to get use to. The results illustrated significant evidence verifying why accidents were occurring. It was observed a number of times that employees did not take safety measures into consideration. For example, not using the proper color coded cutting board, not cleaning the surface area, not laying down a wet towel and placing a clean cutting board over the wet towel, using a dull knife, and not using a guard on equipment during production activities which in turn resulted with an incident of an employee cutting themselves with the chef knife. There were several resolutions to reducing accidents. Two seem the most apparent coming out of the research. One was to provide safety training specific to that job. The other was to provide job aid to help employees remember safety rules. Overall, by using critical incident technique it allowed the department to use a set of procedures for collecting data on employee's behavior in such a way to solve practical problems in preventing accidents. The information gathered from the observation was used to develop the next step. To gather further data on how to reduce accidents in the workplace the research set-up a face to face interviews with 10 employees who had prior injuries. The intent in employing a structure interview technique was to gather facts and opinions held by the ten employees who were familiar with the situation being analyzed. The employees were asked to describe incidents in terms of the circumstances preceding the event, what exactly was done and why was it effective or ineffective, what was the outcome or result of the behavior, and whether the consequences of the behavior were under the employee's control. A pilot test was administered by three subject matter experts (SME) to evaluate the reliability and validating of the interview questions. The results highlight chronicle order of questions and to keep the questions simple and

brief. A total of 10 interviews were performed in a private, centrally located office. The interviews each took approximately 15-25 minutes to complete. The employee was informed of the following: an introduction of person interviewing them to establish rapport, the purpose of the interview, a statement to ensure them that their answers would remain confidential, why they were selected, the current safety issue, and how safety could be improved in the situation. The interviewee received a copy of the survey and all instructions and questions were read to the interviewee. The following questions were created to help guide this process and the employees were asked to think about what was happening when they were performing a task. After the interview was complete the data was collected, notes were summarized, and a report was formed which was analyzed. A prepared thank you letter was completed and sent out as well. The following is a breakdown of each question and the responses from the 10 employees interviewed.

Table 1:

Question One: What is your job title?	
Student Manager (1)	Food Service Worker (4)
Food Service Assistant 3 (1)	Food Production Assistant (1)
Cook (3)	

The majority of accidents came from food service workers and cooks. The research can look into these two positions to see why more accidents happened in these two areas.

Table 2:

Question Two: How long have you worked here?	
Student Manager (1 year)	Food Service Worker (less than a month (2), 2 months, (1), 6 months (1)
Food Service Assistant 3 (15 years)	Food Production Assistant (16 years)
Cook (less than a month, 1 year, 6 months,)	

The data seem to illustrate that less time on the job increased accidents. It seemed for the incident reports that more of the veterans in the RRO department had fewer accidents. This could be due to more training and experience doing the job.

Table 3:

Question Three: Please describe what led to the situation?	
Student Manager	<p>Person One Incident:</p> <p>I was moving a catering cart to the dock. I did not notice a puddle of water on the floor and slipped and fell.</p>
Food Service Assistant 3	<p>Person One Incident:</p> <p>I was converting hot oil from the deep fat fryer area into the trolley while hot oiled poured into the trolley a steam of hot grease came out and burned my two forearms. I was off of work for a week.</p>
Cook	<p>Person One Incident:</p> <p>I was cutting an onion and the knife slipped and cut my left index finger. I had to have 3 stitches.</p> <p>Person Two Incident:</p> <p>I used a knife to open the seal on the can cherries and ended up cutting my wrist.</p> <p>Person Three Incident:</p> <p>I was reaching for the hot pads on top of the steamer and I burn my forearm.</p>
Food Service Worker	<p>Person One Incident:</p> <p>I was cleaning the slicer and cut my self cleaning the unit.</p>

<p>Food Service Worker Continued</p>	<p>Person Two Incident: I got electrical shock when I unplugged the sandwich unit.</p> <p>Person Three Incident: The cutting board slipped and I cut my finger.</p> <p>Person Four Incident: I was serving on the serving line a hurt my wrist.</p>
<p>Food Production Assistant</p>	<p>Person One Incident: I was putting away stock and I lifted a box of butter and hurt my back. I had to leave my shift because the pain was so bad.</p>

The following injuries consisted of slips, falls, cuts, burns, electric shock and repetitive motion.

The research noticed more injuries came from cuts.

Table 4:

<p>Question Four: When did this accident happen?</p>	
<p>Student Manager</p>	<p>3 months ago</p>
<p>Food Service Assistant 3</p>	<p>7 months ago</p>
<p>Cook</p>	<p>1 month ago, 2 weeks ago, 1 month ago, 6 months ago</p>
<p>Food Service Worker</p>	<p>2 weeks ago, 2 weeks ago, 1 week ago, 1 month ago</p>
<p>Food Production Assistant</p>	<p>9 month ago</p>

The accidents happened when the employees has less experience on the job. The more time spent on the job there were a reduction of accidents.

Table 5:

Question Five: Where did this accident happen?	
Student Manager	Loading Dock
Food Service Assistant 3	Sandburg Kitchen
Cook	Sandburg Kitchen (2), Palm Garden Kitchen
Food Service Worker	Sandburg Kitchen (2), Palm Garden Kitchen, Emporium
Food Production Assistant	Sandburg Kitchen

The majority of accidents happened in the kitchen. This can be easily corrected because it is in one department as opposed to other departments to be involved.

Table 6:

Question Six: Who was involved in the incident?	
Student Manager	Self
Food Service Assistant 3	“ ”
Cook	“ ”
Food Service Worker	“ ”
Food Production Assistant	“ ”

The incidents involved the person who was injured no one else were involved in the accidents.

Table 7:

Question Seven: Why do you think the incident happen?	
Student Manager	I should have been more observant when I was moving the cart. I should of clean up the spill before I did anything else
Food Service Assistant 3	I should have taken my time when transporting oil and not hot oil. I had worked a lot of hours and was some what fatigued.
Cook	<p>Person One Incident: Do not use a dull knife</p> <p>Person Two Incident: Only use specific tool designed for the job</p> <p>Person Three Incident: Be aware of your surroundings</p>
Food Service Worker	<p>Person One Incident: The knife was too dull – should have been sharper</p> <p>Person Two Incident: My hands were wet while I pulled at the cord. I should have had dry hands.</p> <p>Person Three Incident: I should have had a clean damp towel under the cutting board</p> <p>Person Four Incident: Reduce time in a specific station</p>
Food Production Assistant	<p>Person One Incident: I should of assisted the load before I move it and how I felt as well.</p>

The research noticed that the majority of employees could identify why the accident happened and how to correct the behavior for future reference. The majority of accidents came from fatigue, poor management, and training on safety.

Table 8:

Question Eight: Could you have done anything that could have been especially effective?	
Student Manager	Yes
Food Service Assistant 3	“ ”
Cook	“ ”
Food Service Worker	“ ”
Food Production Assistant	“ ”

The research found out that they all came to the same conclusion about being more aware of the importance of safety and to follow safety guidelines.

Table 9:

Question Nine: Would any of these provide a safer productive work environment: incorporating job training, redesigning job duties, and installing and operating proper and safer equipment? Explain in further detail?	
Student Manager	Yes, making sure all equipment used in the department is safe to use. A daily audit should be done on all working equipment.
Food Service Assistant 3	Yes, providing job training and a test to make sure employees are up to date on safety. Management involvement by promoting incentives on how safety is doing in the department. Identify hazards and reduce fatigue.
Cook	Person One Incident: Yes, more job training is needed

Cook Continued	<p>Person Two Incident: Yes, safety training is a must – provide posters for safety in the department.</p> <p>Person Three Incident: Yes, make sure all equipment is effective.</p>
Food Service Worker	<p>Person One Incident: Yes, redesigning job duties could help with reduced accidents</p> <p>Person Two Incident: Training and more training</p> <p>Person Three Incident: Yes, employees need to be part of the safety program from the beginning.</p> <p>Person Four Incident: Yes, designing job duties</p>
Food Production Assistant	<p>Yes, job redesign should be reviewed.</p> <p>Some of the height on equipment can cause injuries.</p>

Table 10:

Question Ten: Would a safety program and manual help reduce accidents?	
Student Manager	Yes
Food Service Assistant 3	Yes
Cook	Most defiantly
Food Service Worker	Yes
Food Production Assistant	Yes

The research found out that employees felt it would be a good idea to provide a safety program specifically tailored to the departments. They felt it would enforce the importance of safety.

Table 11:

Question Eleven: How would you improve safety measures in the department?	
Student Manager	Provide a job aide next to the piece of equipment. Posters and get staff involved.
Food Service Assistant 3	Provide a manual on safety so employees can have a resource book.
Cook	<p>Person One Incident: Provide training before they work in the department on how to operate equipment. Provide job hazard on jobs and safety committee.</p> <p>Person Two Incident: Provide time for one on one training with staff.</p> <p>Person Three Incident: There needs to be a group training before the employees start the job about safety measures. Provide a manual.</p>
Food Service Worker	<p>Person One Incident: There needs to be more training on safety. The employees need a point of reference. There needs to be audit and job hazards incorporated into the job.</p> <p>Person Two Incident: More visibility of managers oversee that safety precautions are taken. The managers need an inspection sheet as well.</p>

Food Service Worker Continued	<p>Person Three Incident: In-services provided on preventing accidents and do not allow employees to use equipment if they have not been train on it.</p> <p>Person Four Incident: Reduce shift hours – do not have employees working over time. This could prevent accidents by monitoring the hours. Provide safety audits, and improve management visibility.</p>
Food Production Assistant	Manager need safety meeting.

The research found various ways to improve safety within the department. The employees felt there needs to be more safety in-services continuously. Moreover, employees need to be training on safety before they start working in a position. They recommend having managers establish a safety program that involved safety meetings and more visibility built in by managers to prevent accidents from happening.

Table 12:

Question Twelve: Please state any other comments you feel are relevant to this project.	
Student Manager	To reduce accidents employees need preventive safety measures before they start the job.
Food Service Assistant 3	Provide information on safety to employees.
Cook	Person One Incident:

<p>Cook Continued</p>	<p>Establish a safety committee task force.</p> <p>Person Two Incident: Provide safety trainers for the department.</p> <p>Person Three Incident: Establish competency forms on safety for each employee.</p>
<p>Food Service Worker</p>	<p>Person One Incident: Have the student managers keep a journal on the accidents for the day. The managers can reflect effective and ineffective behavior.</p> <p>Person Two Incident: Promote in-services.</p> <p>Person Three Incident: Evaluate injuries daily and find ways to reduce. Provide job hazard for each job.</p> <p>Person Four Incident: Provide a safety manual and training. Safety board designed for the department provides news, relative information, accidents and shining stars with no accidents.</p>
<p>Food Production Assistant</p>	<p>Managers to enforce safety. Provide safety knowledge and time to learn it. Provide an audit competency form on safety for each job.</p>

The data gathered from the interviews implied that using a visual safety guide, memory sheets, safety inspection checklist, manual, competencies, training, incentive programs, and job

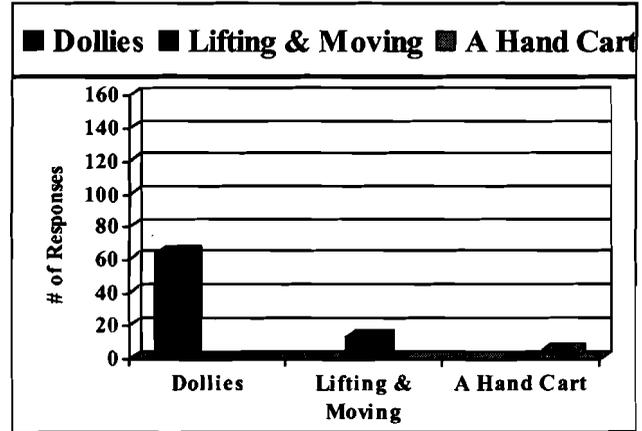
hazard analysis would help in the RRO setting. They thought by providing some of these tools it could help reduce accidents. Additionally, they recommended getting employees involved by either a bulletin safety board, a newsletter or committee program for safety. One such company is proactive with its safety and training The Golden Cafeteria chain requires its managers and staff to complete a one-week intensive course on equipment use and maintenance (Katsigris & Thomas, 2006).

Overall the data collected from direct observation showed three main problems: 1) accidents increased when job requirements exceed workers' capabilities and skills; 2) accidents also increased when boredom on the job occurred; and 3) some accidents occurred because occasionally safety procedures were not followed. The data collected from the interviews were reports on a table along with changes they would like to take place. This data showed that psychological stress, fatigue, and job requirements exceed employee's capacities and skills, and poor management were significant factors in these accidents. The interview data showed that a visual safety guide was recommended to be posted in the work area along with accident preventive plan which contained memory sheet at the work stations, recommended to develop a manager safety inspection checklist, provide more training to fit the specific job which would ensure safe and productive job behavior, and to promote incentive programs for group safety records and incorporating a new job hazard analysis into the task, the tools and work environment. The employees recommended forms on job hazards into the task which is a process that assists workers in planning work safely by establishing proper job procedures and making sure employees are training properly and the second was on safety inspection checklist that should be incorporated to help reduce accidents.

After compiling this data on the observations and interviews and also after reviewing the literature, a survey was developed. The researcher collect complete a survey. A survey will be conducted with a random sample of the RRO employees to gather information on the effectiveness of the safety. The survey data will be collected and analyzed by the researcher using a decision table and a computer program called mini tab. This is a tool to assist the researcher in formulating a decision. A survey will be sent out which has a pointing scale and the mean and standard deviation of each item. The summary of the data decision table has the following in each column that need to be identified: a mean (\bar{x}), standard deviation, responses, percentages of total and a decision table. The first section of the survey assesses skill competencies pertaining to safety and the respondents provided responses that assisted in meeting the objectives for the study. For the survey, questions #5& #9 focused on the importance of safety, questions # 7 & # 4 dealt with a need for training and safety manual, questions # 3 & # 8 centered around job hazards and the occurrences of accidents, questions # 1 & # 6 focused on way to incorporate safer productive work environment, questions # 2 & # 10 concentrated on the understanding of hazards and job-related injuries. The second section of the survey created a Likert scale; it uses a range of 1-5 responses to assess workplace safety as it pertained to reducing accidents in the RRO department. The last section of the survey concentrated on demographics information. The various charts and graphs highlight the results. Responses varied from question to question but overall their responses were common among the participants. The responses of the question are contained in summary of the responses.

Table 13: Question 1: A food service employee needs to transport six cases of croissants to the deli department. The best way to perform this task is by using?

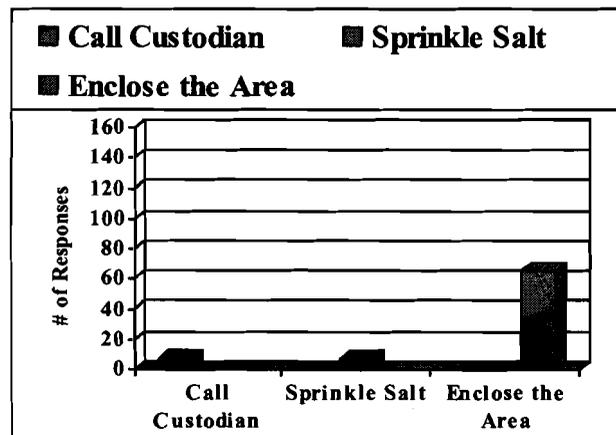
Answers	Number of Responses	% of Total
Dollies (1 pt.)	63	79%
Lifting and moving products by hand (2 pts.)	13	16%
A hand cart with a defective wheel (3 pts.)	4	5%
Mean	1.2625	
Standard Deviation	.5418	



The correct answer is Dollies. The results proved that 79 % provided the correct answer.

Table 14: Question 2: John spilled oil on the floor. The first action he should take is to.

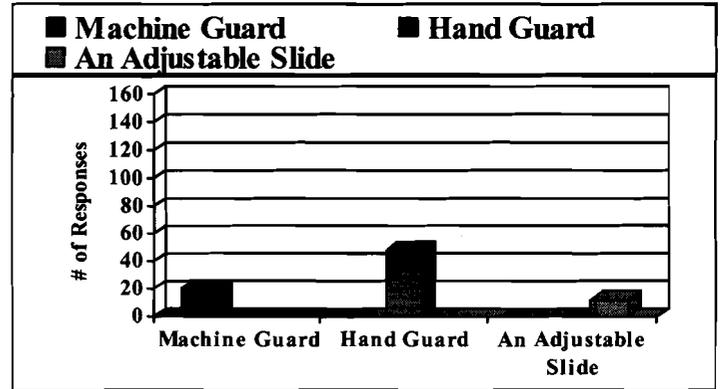
Answers	Number of Responses	% of Total
Call Custodian (2 pts.)	7	9%
Sprinkle salt over the spill (3 pts.)	7	9%
Enclose the area with safety signs and other precautionary measures (1 pt.)	66	82%
Mean	1.2625	
Standard Deviation	.60712	



This question focused primarily on the employee’s knowledge of job hazards. The results showed that there were a total of 66 employees who responded correctly.

Table 15: Question 3: Jamie is told to slice roast beef on the slicer, but is afraid of hurting herself on the sharp blade. What safety equipment should be available to Jamie to avoid minor injuries?

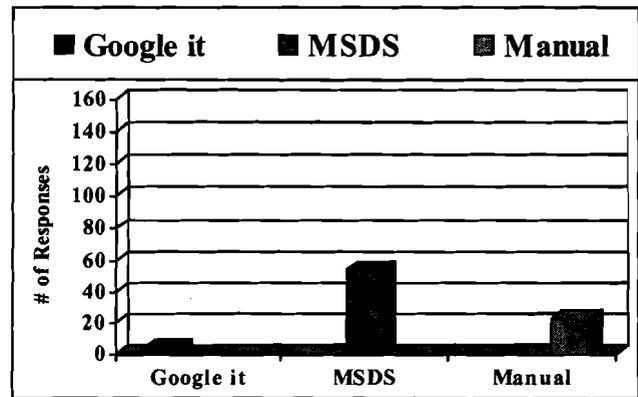
Answers	Number of Responses	% of Total
Machine Guard (1 pt.)	20	25%
Hand Guard (2 pts.)	48	60%
An adjustable slide (3 pts.)	12	15%
Mean	1.9	
Standard Deviation	.6245	



The correct answer is a machine guard. This question focused on job safety and what methods to follow to avoid injuries. There were a total of 20 who responded correctly.

Table 16: Question 4: Karen needs to look for information on how to handle and use foodservice chemical products. Where would she look?

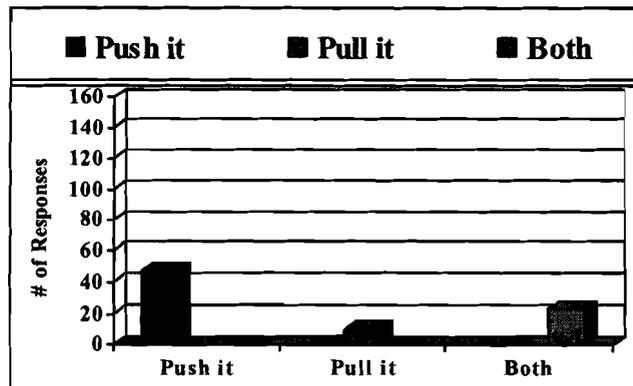
Answers	Number of Responses	% of Total
Google it (2 pts.)	4	5%
Material Safety Data Sheets (1 pt.)	54	67%
Policy and Procedure manual (3 pts.)	22	28%
Mean	1.6	
Standard Deviation	.8888	



The correct answer is Material Safety Data Sheets (MSDS). A total of 54 agreed with this answer. This question raised employee’s knowledge on safety. The result showed 67% of employees knew the correct answer.

Table 17: Question 5: The safest way for Susan to move a trolley or a bin is to?

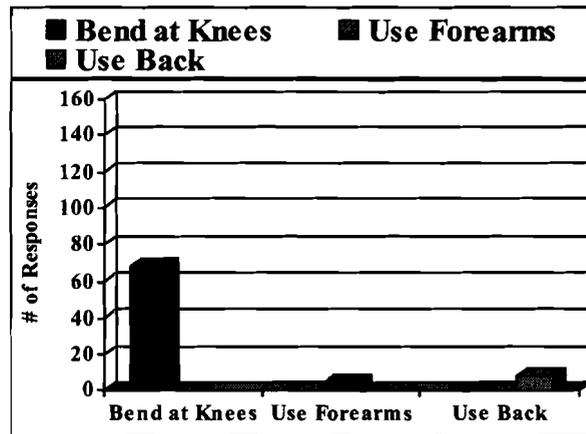
Answers	Number of Responses	% of Total
Push it (1 pt.)	47	58%
Pull it (2 pts.)	10	13%
Do both in different intervals (3 pts.)	23	29%
Mean	1.7	
Standard Deviation	.8860	



The correct answer to this question is to push it. This question lets the researcher know if the employees are aware of safe ways to perform a task in the work environment. The total number who selected the correct answer was 58%.

Table 18: Question 6: Jeremy needs to lift a 50 lbs item off of floor; the safest way to lift is to:

Answers	Number of Responses	% of Total
Bend your knees (1 pt.)	68	85%
Use your forearms for strength (2 pts.)	4	5%
Lift and bend by using your back (3 pts.)	8	10%

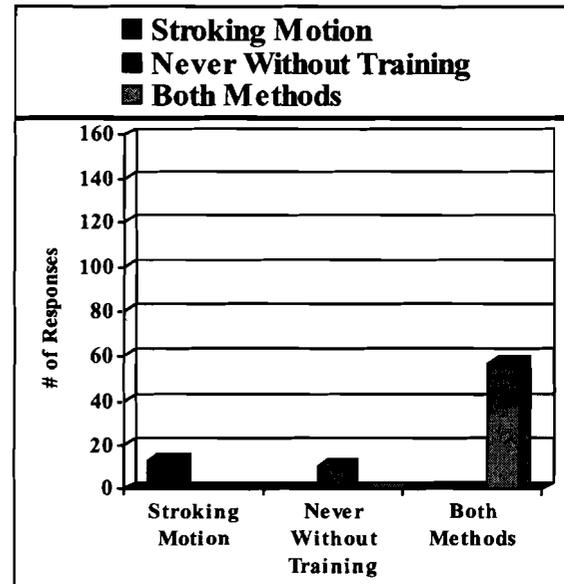


Mean	1.25
Standard Deviation	.6225

The correct response was bending your knees. This particular question raised the question if there was a need for safety training. The overall response was 68 and this signifies 85% showed employee's knowledge on proper safety measure to take to avoid accidents.

Table 19 Question 7: The best method to use when cleaning the blades on equipment is:

Answers	Number of Responses	% of Total
Wipe with stroking motion away from the blade edges (2 pts.)	13	16%
Never attempt to clean any piece of equipment unless you have been properly trained (3 pts.)	10	13%
Both methods are correct (1 pt.)	57	71%

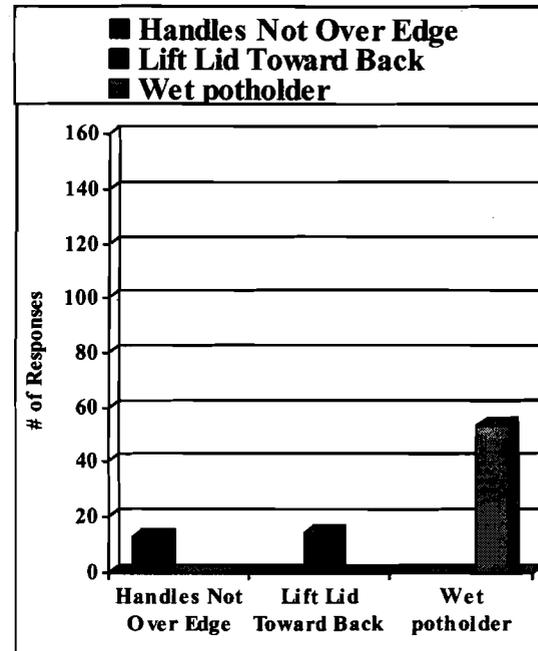


Mean	1.4125
Standard Deviation	.7017

This question focused on both methods being the best choice. The results showed that there were a total of 80 that took the survey and 57 responded correctly.

Table 20: Question 8: Sarah is cooking sauce on a stove top. Which one of the statements below is correct?

Answers	Number of Responses	% of Total
Make sure that the handles do not extend over the edge of the stove (1 pts.)	13	16%
Make sure the lid is lifted towards the back of the pot to prevent steam burns (2 pts.)	14	18%
Make sure to use a wet potholder instead of dry potholders (3 pt.)	53	66%

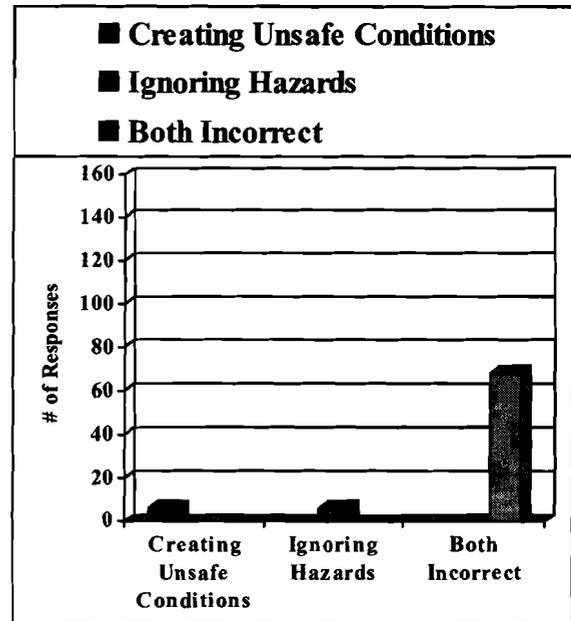


Mean	2.5
Standard Deviation	.7583

This question focused primarily on what should be done to have a safer productive work environment. The correct answer was to make sure that handles do not extend over the edge of the stove. The total response for the correct statement was 13. This makes it apparent employees are not aware of the correct safety measure to take. Although, the participants may not have read the question thoroughly because only 16% of the responses to this question were of the correct answer.

Table 21: Question 9: Kitchen Safety can be caused by:

Answers	Number of Responses	% of Total
Creating unsafe conditions and not paying attention (2 pts.)	6	7.5%
Ignoring hazards and doing unsafe practices (3 pts.)	6	7.5%
Both statements are correct (1 pt.)	68	85%

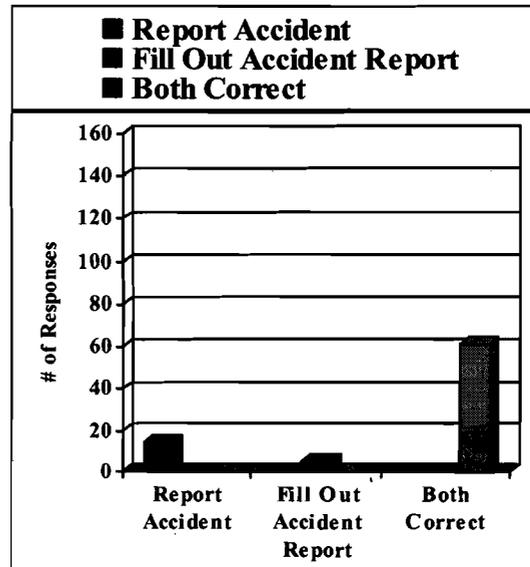


Mean	1.225
Standard Deviation	.5695

The correct response is both statements are correct. This addresses the employees' knowledge of the importance of safety in the department, and knowledge of hazards and unsafe conditions. The total participants' response on the correct answer was 68 (85%).

Table 22: Question 10: John cut his finger while slicing vegetables on a cutting board should he?

Answers	Number of Responses	% of Total
Report the accident to his supervisor (2 pts)	14	18%
Fill out an accident report (3 pts.)	5	6%
Both statements are correct (1 pt)	61	76%



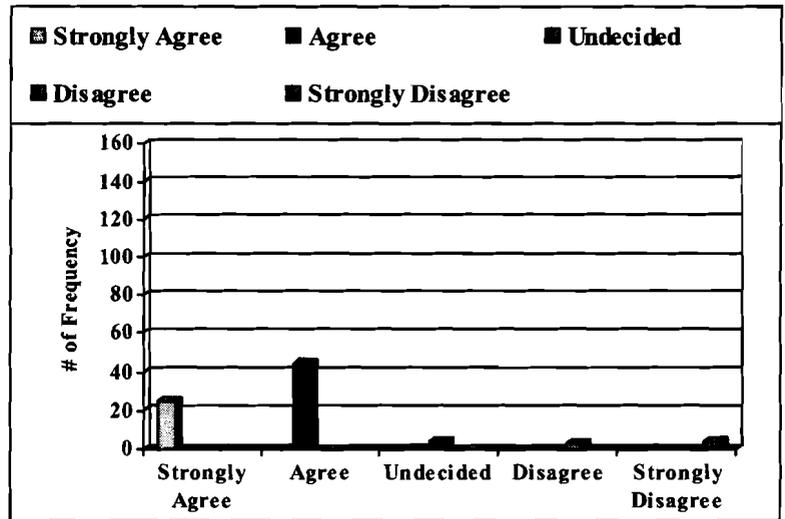
Mean	1.3
Standard Deviation	.5788

The last question focused on an understanding of hazards and job related injuries. The results show that there were a total of 61 who answered the question correctly. This proved that most employees know the proper procedures to follow when an accident happens.

The second section of the survey used 1-5 responses with one being strongly disagree and five being strongly agree. The following tables highlight the ten statement results and charts are included in this section.

Table 23: Statement 1: The department has safe systems of work relevant to the employee’s job/tasks and workplace. (Work methods, processes, practices and procedures)

Responses	Frequency (n= 80)	Percentage (100)
1 = Strongly Agree	25	31%
2 = Agree	44	55%
3 = Undecided	4	5%
4 = Disagree	3	4%
5 = Strongly Disagree	4	5%



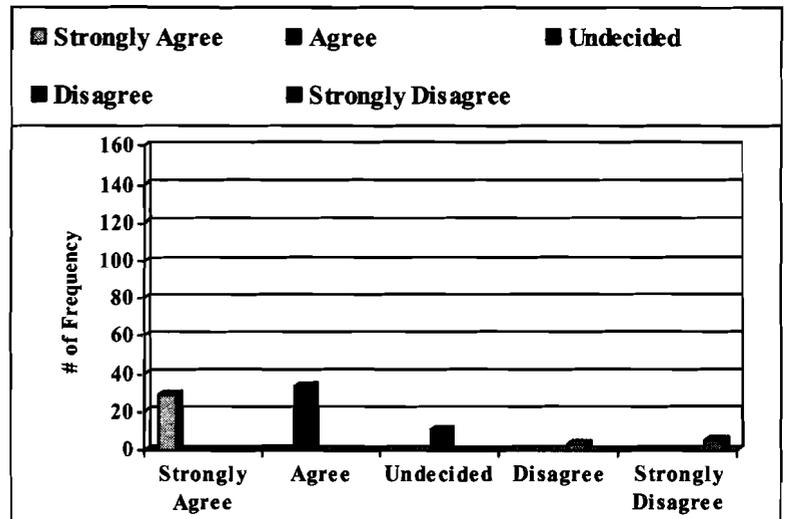
Mean	1.9625
Standard Deviation	.9804

Almost half of the eighty participants (55%) or forty-four participants agree with the statement and twenty-five additional students (31%) strongly agreed in favor of statement. Of the remaining participants four (5%) were undecided, three participants (4%) disagreed with the statement and four participants (5%) strongly disagreed. The mean for this item was 1.9625 and the standard deviation was .9804.

Table 24: Statement 2: You know how to notify and correct hazards, where applicable.

Responses	Frequency (n= 80)	Percentage (100)
1 = Strongly Agree	29	36%
2 = Agree	33	41%
3 = Undecided	10	13%
4 = Disagree	3	4%
5 = Strongly Disagree	5	6%

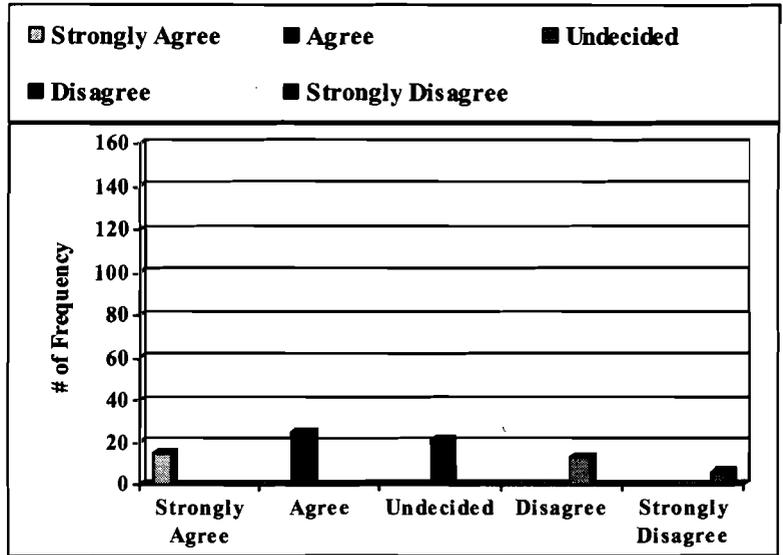
Mean	2.025
Standard Deviation	1.0952



Statement 2 shows that thirty-three participants (41%) agreed with the statement while twenty-nine participants (36%) strongly agreed. Of the eighteen remaining students 13% were undecided, 4% disagreed and 6% strongly disagreed with the survey statement. The mean for this item was 2.025 and the standard deviation was 1.0952.

Table 25: Statement 3: The department sufficiently informed employees about new developments in safety.

Responses	Frequency (n= 80)	Percentage (100)
1 = Strongly Agree	15	19%
2 = Agree	25	31%
3 = Undecided	21	26%
4 = Disagree	13	16%
5 = Strongly Disagree	6	8%

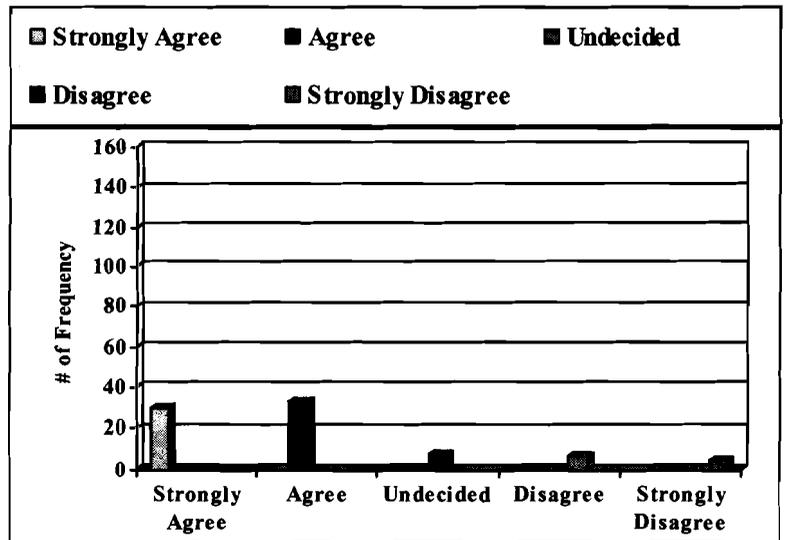


Mean	2.625
Standard Deviation	1.1766

Statement 3 examines if the participants are informed on safety. Of the eighty participants in the survey twenty-five (31%) agreed with the statement. The remaining participants rated the statement in the following way: fifteen participants (19%) strongly agreed, twenty one participants (26%) were undecided, thirteen participants (16%) disagreed and only six (8%) strongly disagreed. The mean for this statement was 2.625 and the standard deviation was 1.1766.

Table 26: Statement 4: There is adequate space for employees to perform duties without been injured.

Responses	Frequency (n= 80)	Percentage (100)
1 = Strongly Agree	30	38%
2 = Agree	33	41%
3 = Undecided	7	9%
4 = Disagree	6	7%
5 = Strongly Disagree	4	5%

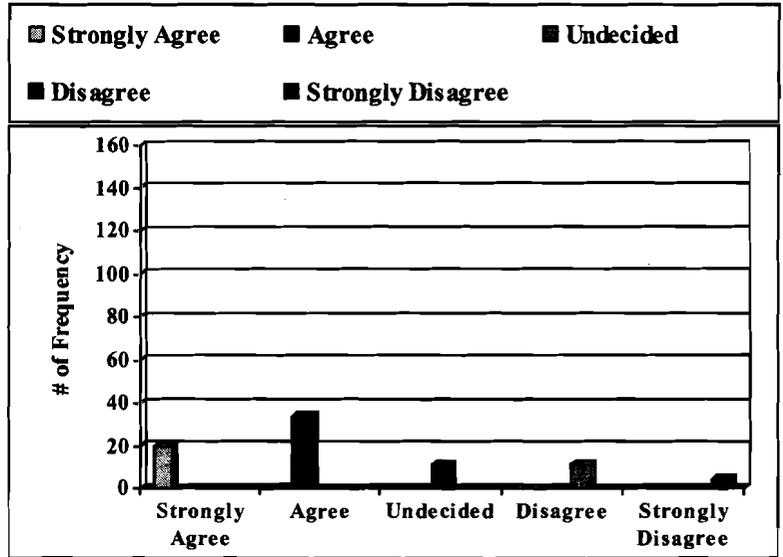


Mean	2.0125
Standard Deviation	1.1011

Statement 4 reveals that the majority of the participants agreed with the survey statement. Of the eighty participants for this survey, thirty-three (41%) agreed and thirty strongly agreed (38%) while seven participants (9%) were undecided and six participants (7%) disagreed as well as four (5%) strongly disagreed with the statement. The mean was 2.0125 and the standard deviation was 1.1011.

Table 27: Statement 5: Safety equipment and resource are easy to find when I need them.

Responses	Frequency (n= 80)	Percentage (100)
1 = Strongly Agree	20	25%
2 = Agree	34	42%
3 = Undecided	11	14%
4 = Disagree	11	14%
5 = Strongly Disagree	4	5%

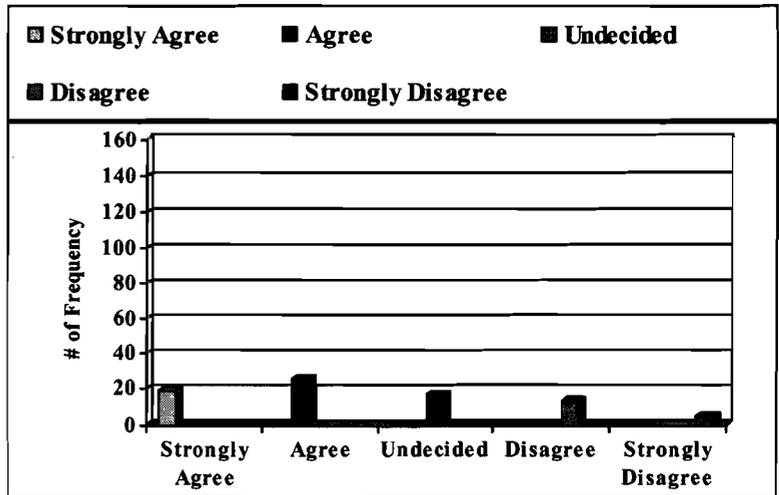


Mean	2.3125
Standard Deviation	1.1357

In statement 5 the results of this statement showed that twenty of the study participants (25%) strongly agreed with the statement. Table 5 also identifies thirty-four participants (42%) agreed with the statement and eleven participants (11%) were undecided and disagreed. The remaining four strongly disagreed (5%). The mean was 2.3125 and the standard deviation was 1.1357.

Table 28: Statement 6: Workers know who to talk to about accidents and know how to file reports.

Responses	Frequency (n= 80)	Percentage (100)
1 = Strongly Agree	19	24%
2 = Agree	26	33%
3 = Undecided	17	21%
4 = Disagree	13	16%
5 = Strongly Disagree	5	6%

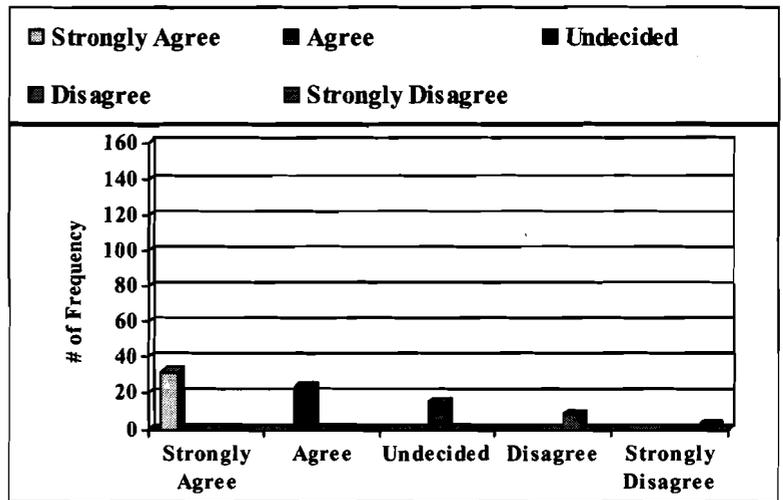


Mean	2.4875
Standard Deviation	1.1937

The responses to this statement were a substantial majority of the nineteen (24%) participants rated the statement as strongly agree. Table 6 details a total of twenty-six participants (33%) that rated agree; while the remaining thirty-five participants rated the question undecided with seventeen (21%) responses. Thirteen (16%) disagreed and five (6%) strongly disagreed with the statement. The mean for this statement was 2.4875 and the standard deviation was 1.1937.

Table 29: Statement 7: A safety manual would promote safety and reduce accidents.

Responses	Frequency (n= 80)	Percentage (100)
1 = Strongly Agree	32	40%
2 = Agree	23	29%
3 = Undecided	15	19%
4 = Disagree	8	10%
5 = Strongly Disagree	2	2%

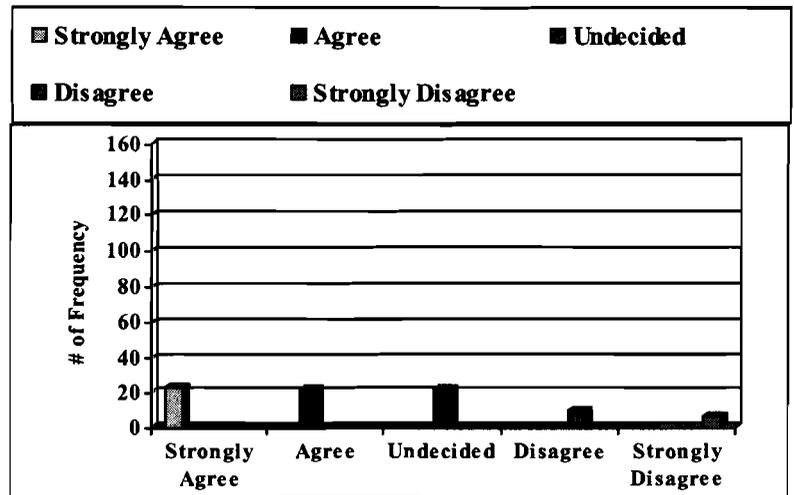


Mean	2.0625
Standard Deviation	1.0994

Once again the overall satisfaction with the safety manual was high. Table 7 reveals that thirty-two of the participants (40%) rated the statement as strongly agree. Table 7 also shows that twenty-three of the participants (29%) rated the statement with agree and fifteen participants (19%) reported undecided. Eight of the participants (10%) disagreed and two strongly disagreed (2%). The mean for this section was 2.0625 and the standard deviation was 1.0994.

Table 30: Statement 8: A daily inspection on workplace safety would reduce accidents.

Responses	Frequency (n= 80)	Percentage (100)
1 = Strongly Agree	23	29%
2 = Agree	21	26%
3 = Undecided	21	26%
4 = Disagree	9	11%
5 = Strongly Disagree	6	8%

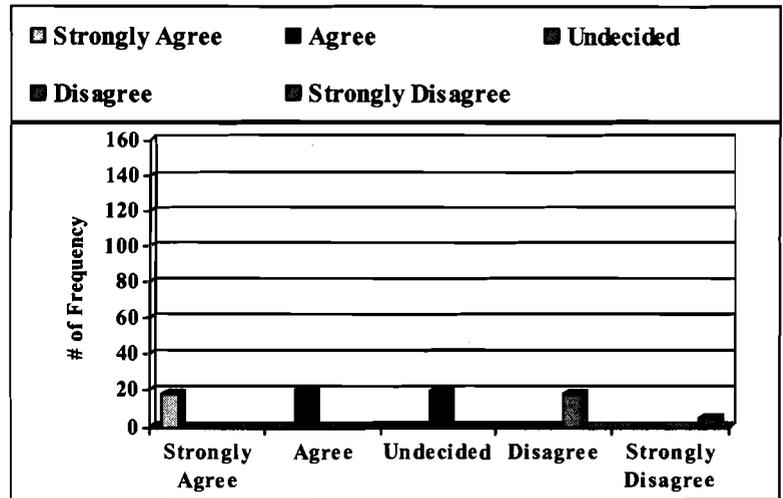


Mean	2.425
Standard Deviation	1.2224

Table 8 reveals that daily inspection can reduce accidents; twenty-three participants (29%) strongly agreed with the statement. The remaining participants included twenty-one participants (26%) who agreed with the statement and twenty-one were undecided (26%). Nine participants (11%) disagreed with the statement. The remaining six (18%) strongly disagreed with the statement. The mean 2.425 for this statement was and the standard deviation was 1.2224.

Table 31: Statement 9: Posting a monthly safety record would help reduce accidents.

Responses	Frequency (n= 80)	Percentage (100)
1 = Strongly Agree	18	22.5%
2 = Agree	20	25%
3 = Undecided	19	24%
4 = Disagree	18	22.5%
5 = Strongly Disagree	5	6%

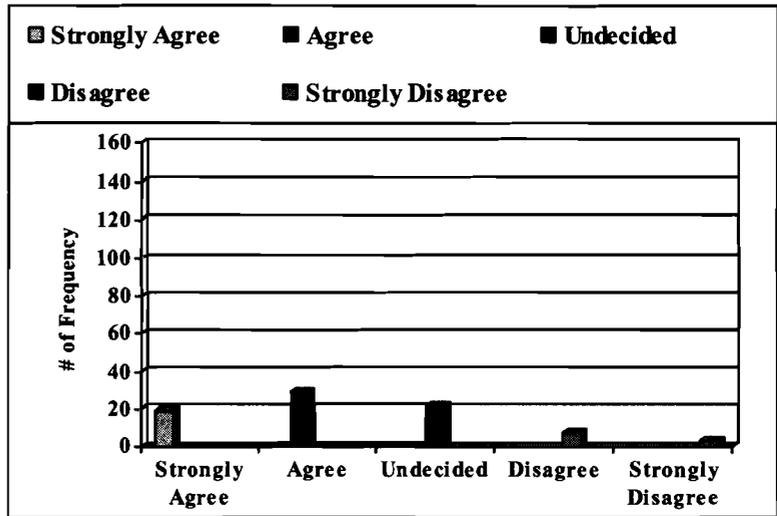


Mean	2.65
Standard Deviation	1.2258

Eighteen strongly agreed (22.5%) and disagreed (22.5%). Twenty participants (25%) responded with a rating of agree to the statement while nineteen participants (24%) responded with undecided to the statement. Table 9 showed five (6%) participants strongly disagreed. The mean was 2.65 and the standard deviation was 1.2258.

Table 32: Statement 10: The department has a method for workers to report accidents and near misses.

Responses	Frequency (n= 80)	Percentage (100)
1 = Strongly Agree	19	24%
2 = Agree	29	36%
3 = Undecided	22	27%
4 = Disagree	7	9%
5 = Strongly Disagree	3	4%

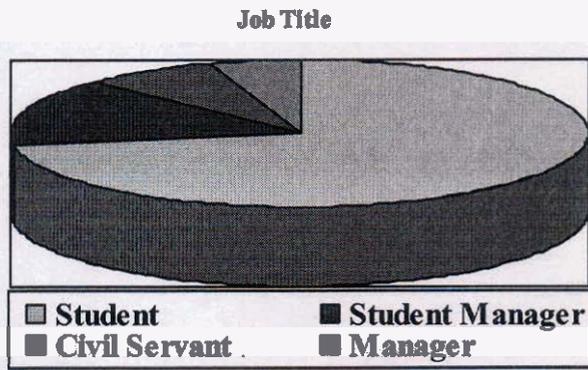


Mean	2.325
Standard Deviation	1.0461

Table 10 reveals the responses reported for the statement that asks participants to rate the department methods for reporting accidents and near misses. Table 10 shows that nineteen participants (24%) in the study strongly agreed to the statement. Table 10 also shows that twenty-nine participants (36%) reported a rating of agree to the statement and twenty-two participants (27%) had been undecided for the statement. Seven (9%) disagreed with the statement as well as three (4%) strongly disagreed. The mean for this statement was 2.325 and the standard deviation was 1.0461.

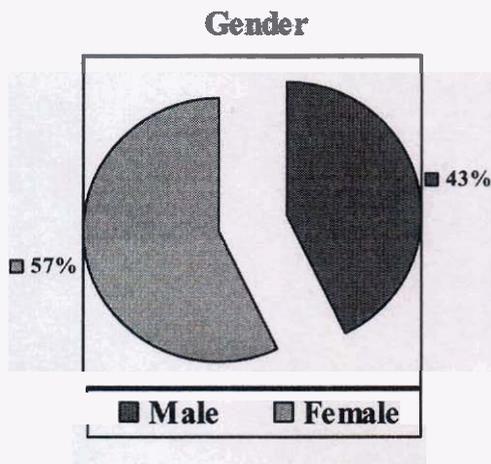
The last section addresses five demographic questions. The results are shown on graphs.

Question 1: Demographic Information – Figure 2: Title of job



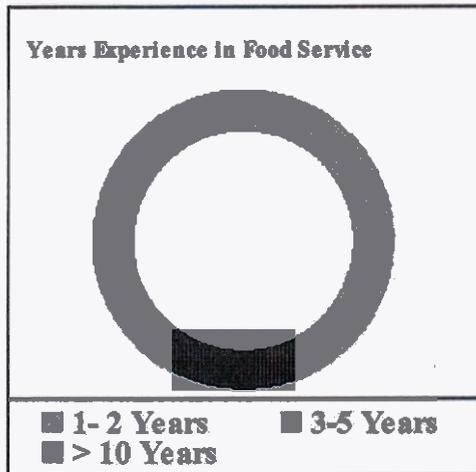
The participants were asked to indicate their job title. A substantial majority of the 58 participants were students. The second major job category were in student managers.

Question 2: Demographic Information – Figure 3: Gender



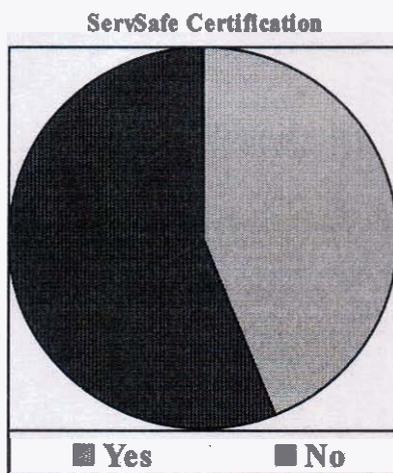
This question focused on the demographic of the RRO department. The results show that there were a total of 80 who took the survey. 57 percent were females that took the survey and 43 percent of males took the survey.

Question 3: Demographic Information – Figure 4: Years of food service experience



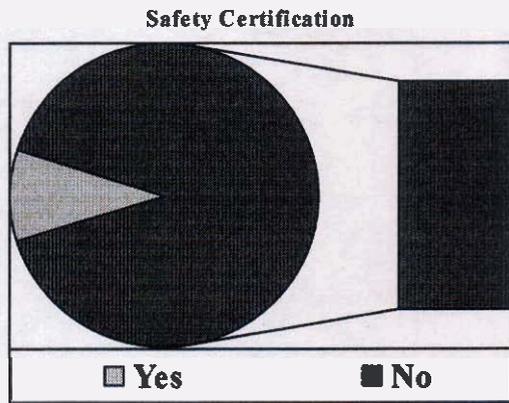
Thirty-four of the respondents (42.5%) have 1 to 2 years experience in the foodservice industry and 10 out of 80 (12.5%) have over 10 years of experience. The majority foodservice experience from the 80 respondents is 3 to 5 years experience.

Question 4: Demographic Information – Figure 5: ServSafe Certification



The question respondents were able to let the research know if they had received training with ServSafe, 35 of them (43.8%) received certification and the 45 of them (56.2%) did not.

Question 5: Demographic Information – Figure 6: Safety Certifications



This question focused primarily on other safety certifications. The results show that there were a total of eight and (10%) of employees who had safety certifications and 72 (90%) had none.

Chapter V: Discussion

This chapter includes a summary of the study, conclusions, and recommendations.

The researcher begins with a summary of the research problem and objectives, the significant of the study, the design, and the major findings. The conclusions will cover the significant factors from the surveys sent and completed, as well as the findings from the interviews and observations. Recommendations for this study and further research will conclude the chapter. The purpose of this study is to reduce accidents and injuries throughout the Residential Restaurant Operations. The objectives of the study were:

- To identify duties and tasks performed by employees.
- To identify critical job requirements to be able to do the job effectively without accident.
- To identify any job hazards contributing to accidents.
- To identify a safer, productive workplace through the incorporation of job training, the redesigning of jobs, and the redesigning and/or replacement of equipment that is unsafe.
- To identify how multiple intelligences, critical thinking, and reflection can contribute to a safer, productive workplace.
- To identify a need for a safety program and manual.

These objectives along with a review of literature were conducted to obtain a broad knowledge on the study. In addition the researcher benchmarked the study by reviewing all the data on the observation, interview and survey and documented the findings. Benchmarking information was helpful in determining practices that were effective, as well as potential problems. Employees in the study were willing to share their expertise and experiences. The

employees realized a need to reduce accidents and were eager to contribute to a resolution to the research.

The first objective of this study was to identify duties and tasks performed by employees followed with the second objective to identify critical job requirements to be able to do the job effectively without accident. The last objective was to identify any job hazards contributing to accidents. In these three objectives, direct observation was used and along with examining John Flanagan's critical incident technique through direct observation to find the critical component of job, duty, task and the behavior which is critical in the difference between adequate performance and inadequate performance in doing a job while performing proper safety measures to prevent work injuries. The results identified requirements for doing a job effectively without accidents. In the second area, the research was able to predict and control performance so workers could accomplish their duties and tasks correctly, efficiently, and safely. The third area found ways to create a safe and productive work environment by reducing accidents. This was done by removing barriers, redesigning specific job duties, and incorporating training to identify the critical aspects of job safety for the employees.

In the interview the last three objectives were addressed. The employees were asked to provide feedback on their accident and injuries that took place in the department along with any useful information which could benefit the department by reducing accidents. The information obtained from the completed interview was used to help make changes, additions, and deletions, and also was used to be incorporated in the final revision of the survey. The data was collected using a survey instrument that was distributed to residential restaurant operations between 27 November 2006 and 8 December 2006. The survey was implemented to collect data for the study. There were a total of 160 selected to receive the survey designed particularly for this

study. The first on-line mailings, a total of forty-three surveys were returned and completely valid. The second on-line mailings were thirty-seven. There were a total of twenty two undeliverable messages. The overall response rate was 50 percent. Removing the undeliverable messages from the total surveys sent yields rate of 58%. The majority of respondents were female. The data collected was analyzed and reported using descriptive statistics including mean, standard deviation, frequencies and percentages.

Limitation

This study only covered the total population of Residential Restaurant Operation employees of only one campus, the University of Wisconsin-Milwaukee. The results and interpretations should not be extrapolated to other types of Universities. The research delved into observations, interviews and survey to understand why increases of accidents were occurring in the operations. The observation identified requirements for doing a job effectively without accidents. The researcher reviewed the behavior, tasks, equipment and if safety measures were incorporated. From this conclusion questions were compiled for the interview. The researcher only interviewed past injured employees to gather information on why the accidents happened and how to correct the behavior by investigating the critical thinking skills along with recommendations on improved safety and accidents within the department. From these results the data was collected and a survey was created. The participants included 37 men and 43 women. Gender differences were not taken into consideration in the interpretation of the results. The survey was used and responses reflecting primarily the knowledge and skill employees had on safety and their reactions to department safety system in place. Additionally, it is assumed that the responses made by the participants represent their candid and honest assessments. The survey did not explore deeper to see if the recommendations from the employees on safety could transfer that

knowledge to their job and reduce accidents. The possibility of further research could be incorporated into further study along with incorporating a department safety manual and building the concepts of multiple intelligences and critical thinking skill as being the heart of the manual.

Conclusion

The conclusion will, once again, discuss the findings of the study. The research findings, along with the observations, interviews and survey completed, were found to have much in common. Based upon the objectives of this study the following conclusions have been made. The researcher found part of the use of CIT provided the opportunity to interact with workers in understanding a worker's decisions on how tasks can be made more efficient with fewer accidents. The researcher found contributing factors that led to accidents like doing task incorrectly and even improper use of equipment. The data highlights how much the CIT can help a manager to modify job behaviors and tasks, and then begin the process of implementing new training. Furthermore, the data has been shown that critical thinking skills and multiple intelligences can influence employees learning, and can impact the organization as well. Although further research on the impact of critical thinking and multiple intelligences on organizational is still warranted, the researcher's findings does support the belief critical thinking skill have an impact on the organizational as a through different methods. Armed with this information, the RRO and employees have the opportunity to increase their awareness of this, and in turn an awareness of their impact on the organization. As organizations become more challenged by an increase in competition, it became important to develop and incorporate more critical thinking skills within the organizations. It is just as important to identify the eight major conclusions to this study:

- The critical incident techniques helped keep track of incidents, which was used to help solve the root cause of the problems.
- The use of job hazard analysis assists workers in workplace safety for a reduction of accidents.
- Identify job training, redesigning of jobs, redesigning and replacement of equipment and others changes to provide more productive and safer workplace environment.
- Enhance the benefit of multiple intelligences, critical thinking, and reflection can have in producing greater, positive employee performance and safety.
- Incorporate the use of critical thinking, multiple intelligence and reflective thinking into a safety manual.
- Implement the recommendation from the participants to provide safety program adding safety training as well as committee safety meetings is important to future success of the department.
- Incorporate the use of action research model through assess the problem, develop a safety program to fix the problem and lastly evaluate the results.
- Further use and feedback will be part of a continuous improvement process in reducing accidents in the workplace.

Overall, with all this to think about safety should be taught as a way of life and part of the department's culture. This means training them on how to use equipment correctly, explain why these safety procedures are in place and posting them in prominent locations.

Recommendation

Due to the time and other constraints, recommendations for further studies were also noted based on the limitations. The following are recommendations made by the researcher for improvement of the University of Wisconsin-Milwaukee's Residential Restaurant Operations.

- The results should be shown in a graph, used in conjunction with future projects on reducing accidents and measuring the progress for improvement.
- Yearly recognition should be developed for the employees who made a significant improvement toward safety.
- Establish job aids and competency charts to help reduce accidents.
- Create an RRO safety manual for new and current employee training to be used as a supplement to the hands on training.
- Emphasize the use of critical thinking skills and multiple intelligences by incorporating it into monthly safety meetings, safety manual, as well as in the department training program.
- Emphasize the need to enforce safety measures like convey the importance of turning off, shutting down or locking the equipment in the RRO department.

This study provided the foundation to further research in the area of workplace safety. But more research is still needed. What follows are some additional alternatives for future research:

- Conduct further research on area universities that would compliment or challenge the findings and interpretation of this study with University of Wisconsin-Madison, University of Platteville and University of Stevens Point.
- Expand the study to include more diverse industry types would add insight to the current success factors and future challenges in reducing accident and injuries in the food service arena.

- Continued quantitative and qualitative research in incorporating a safety training manual.
- Establish better ways to transfer the safety manual training to reduce accidents.
- Analyze the job hazards to determine which are the most effective to reducing accidents.
- Shorten the survey with the objectives to be very specific ones.

All in all, the information acquired from this study will add to the research done in this area of workplace safety and assist researchers in utilizing the study for further research. Hopefully this research will also be beneficial to other organizations with similar situations. Continuous research in these areas is needed and will broaden the limited resources and knowledge that is currently available.

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Appendix B:
HAZARD SHEET

Department recorded for:			Date:			
HAZARD		SIGNIFICANT		ACTION		REVIEW
Hazard & Harm	Where or What Task?	Significant (Y/N)	Does the action eliminate, isolate or minimize the risk?	Action	How often is action monitored?	Date of last review

Appendix C:

Managers Safety Inspection Sheet

Question:	Yes	No	Recommended Action or Comments: Date/Time
Surface Areas:			
Area free of clutter and sanitary?			
Are floors clean and kept dry?			
Are floors clear of objects that could cause slips/falls?			
Are appropriate warning signs posted?			
Storage, Walls & Lighting:			
Does the storage layout minimize lifting problems?			
Are trolleys or dollies available to move heavy equipments?			
Are signs and fixtures securely fastened to the wall?			
Are lighting levels in work areas adequate?			
Machinery:			
Are there enough work space?			
Are noise levels controlled?			
Are safety guards used on machinery?			
Are equipment properly working and maintained?			
Are proper protection worn when operating equipment?			
Are equipment inspected regularly?			

Hazards Materials			
Are chemicals properly labeled?			
Are MSDS available?			
Are food kept away from chemicals?			
Fire Prevention			
Are emergency phone numbers close to phones?			
Does staff know the location of fire exits and evacuation routes?			
Does staff know how to use fire extinguishers?			
Are fire extinguishers inspected regularly?			
Training			
Does staff complete safety training when hired or when doing new task?			
Does staff have refresher courses on safety training?			
Are enforcement on safety communicated and recorded?			
Manager's Signature: Date: Additional Comments:			

Appendix D:

SAFETY CHECK

Department Area:

Job:

Date:

Time or Shift:

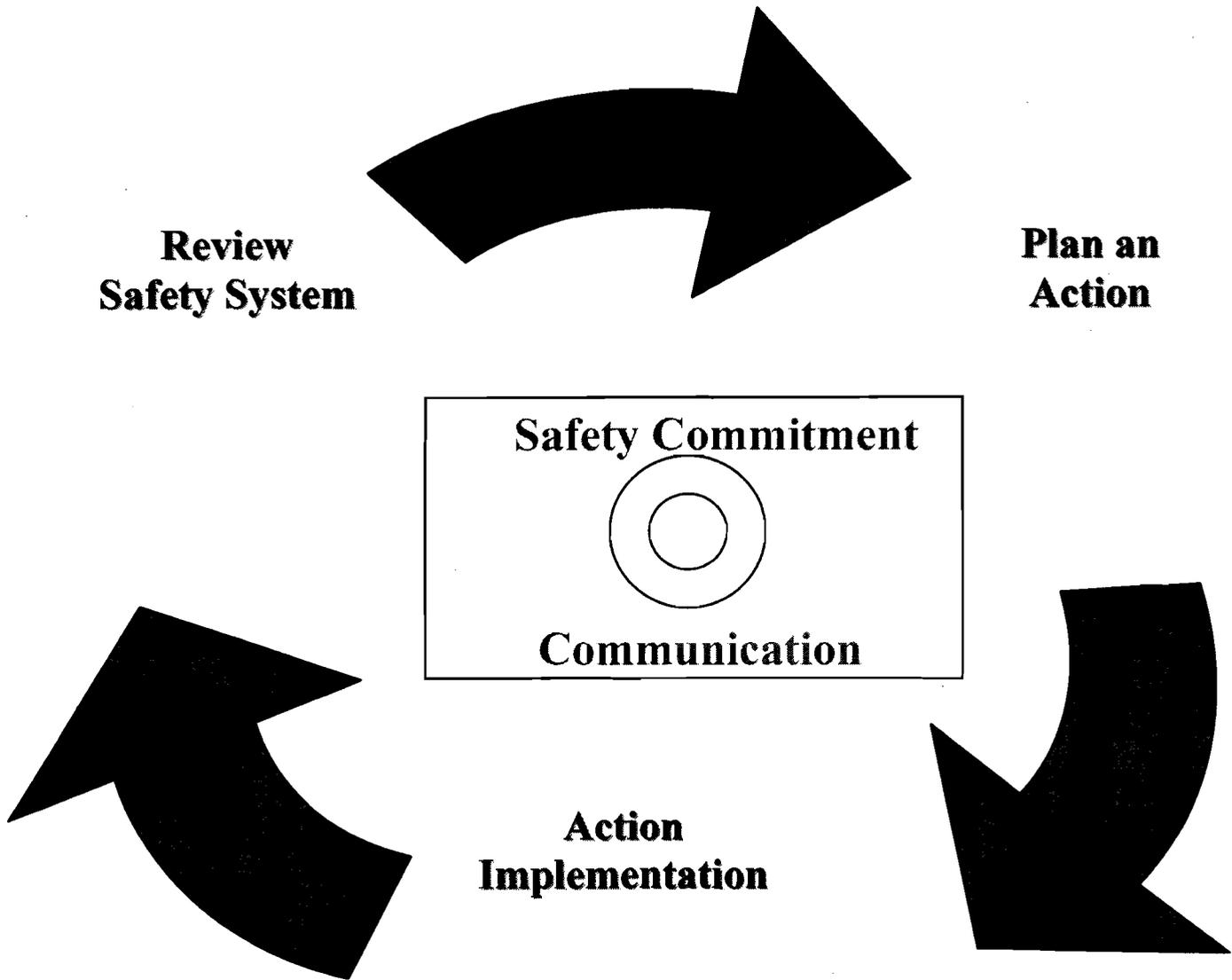
Performed by:

Person Observed:

Safety Procedures	<u>Yes</u>	<u>No</u>	N/A	Comments or Corrective Actions:
1.				
2.				
3.				
4.				

Appendix E:

SAFETY MANAGING



Appendix F: Monthly Safety Meeting Record

Department:
Date:
Participants':

1. Accidents & Incidents

Accidents	Year to Date	Previous Year
Number of accidents		
Number of near misses		
Number of claims		

2. Results of Monthly Inspections

Types of Hazard	Describe hazard and location	Recommended corrective action	Person responsible	Date corrected

3. Education and Training:

List new safe work procedures and other matters.

4. Other Concerns:

List other safety concerns discussed.

5. Next Meeting:

Date and time of next meeting.

List any matters that need to be followed up at the next meeting.

Appendix G: Behavior Observation

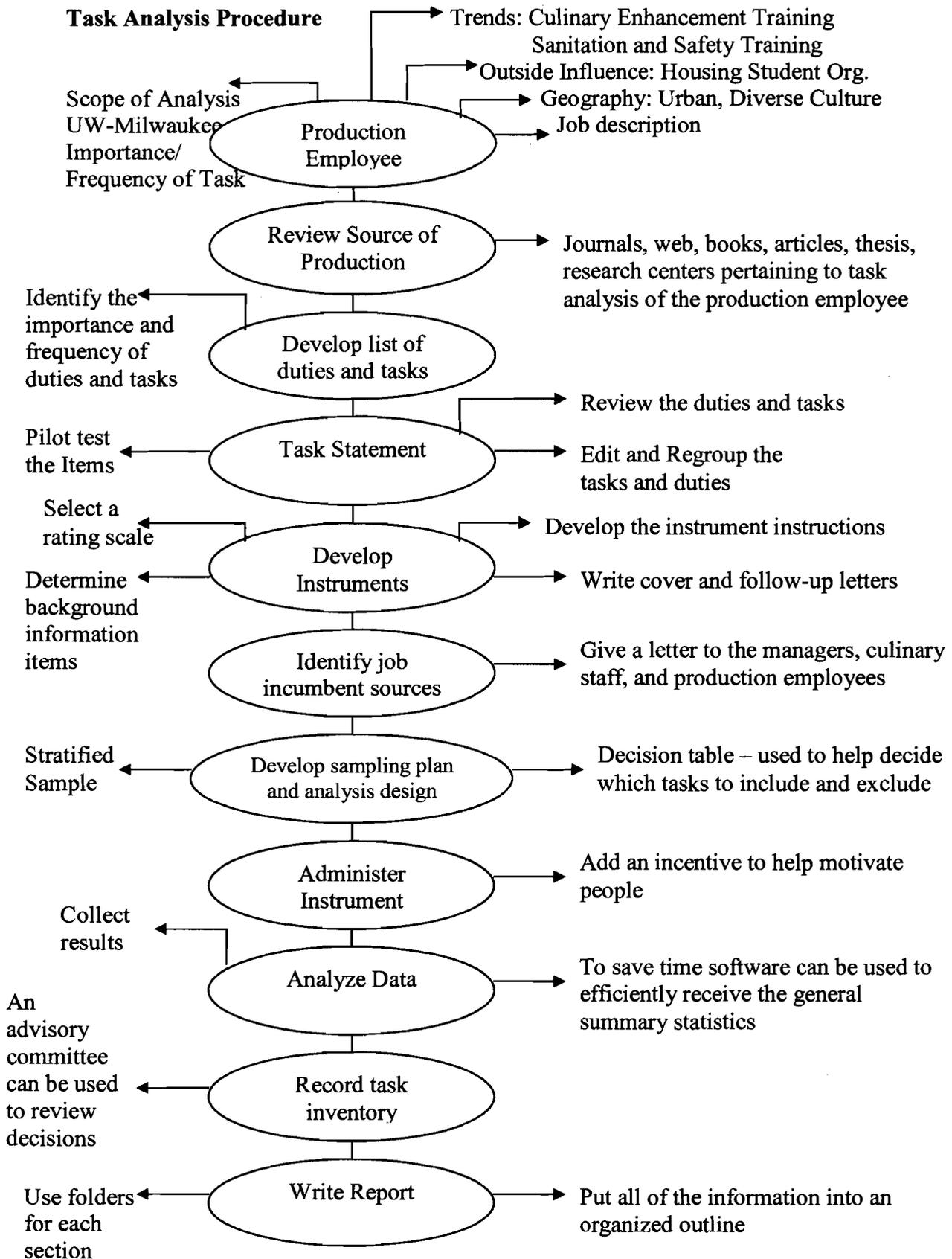
Figure 2: <i>BEHAVIORAL OBSERVATION</i> (qualitative description & detail sheet)				
Date:	Behavior:	Task:	Safety:	Consequences/ Comments:
Start:			Equipment:	
End:				
Setting/Person:				
Date:	Behavior:	Task:	Safety:	Consequences/ Comments:
Start:			Equipment:	
End:				
Setting/Person:				
Date:	Behavior:	Task:	Safety:	Consequences/ Comments:
Start:			Equipment:	
End:				
Setting/Person:				

Appendix H: Interview

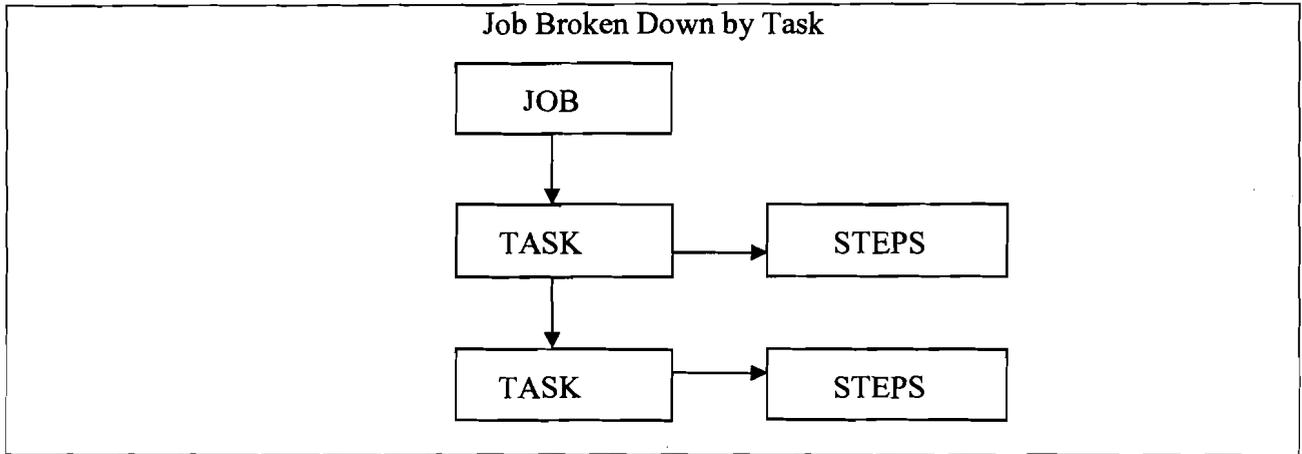
Interview Questions

1. Please state your job title.
2. How long have you been on this job?
3. Please describe what led to the situation?
4. When did this incident happen?
5. Where did this incident happened?
6. Who was involved in the incident?
7. Why do you think the incident happen?
8. Could you have done anything that could have been especially effective?
9. Would any of these provide a safer productive work environment:
incorporating job training, redesigning job duties, and installing and operating
proper and safer equipment? Explain in further detail?
10. Would a safety program and manual help reduce accidents?
11. How would you improve safety measures in the department?
12. Please state any other comments you feel are relevant to this project.

Appendix I: Task Analysis Procedure



Appendix J: Job Broken Down By Task



Appendix K: Task Analysis for Dicing Onions

Task Analysis for Dicing Onions

1. Review production sheet for quantity of onions.
2. Gather ingredients and tools - Select a sharp chef's knife.
3. Peel many layers of papery skin.
4. Pull any hairy root.
5. Place the onion on its side on a chopping board.
6. Hold knife comfortably, with forefinger running down on one side of the blade and thumb pressing against the opposite side.
7. Slice the knife down and away from you.
8. Slice off the top half-inch of the onion.
9. Turn the onion so it rests on the newly cut flat surface.
10. Start at the center of the root end and slice the onion in half.
11. Rest half of the onion the root end pointing away from you.
12. Slice down through the onion.
13. Make slices but leave $\frac{1}{2}$ inch between each cut.
14. Keeping the root intact keeps the onion from falling apart.
15. Rotate the onion so the end cut faces your knife blade.
16. Cut $\frac{1}{2}$ " cuts perpendicular to the first set of cuts.
17. Discard root and repeat on the other half.
18. Place completed product in a 4 $\frac{1}{2}$ " pan, and chill in appropriate cooler.

Appendix L: Job Description

Job Description: Cook Job Description

Working Title: Cook

Accountable to: Executive Chef

Operation: Residential Restaurant Operations

Pay Range: Starting wage \$ 7.00 depending on experience

Range of possible scheduled hours: 1st or 2nd shift demanding on needs of operation

Summary of Position: Responsible for assisting in the preparation of all food items for the Sandburg Cafeteria, other retail outlets and for service at catered events. Prep-cook must be able to prepare items by using standardized recipes within department standards. In this position a wide variety of equipment and utensils according to the daily prep list are used.

Qualifications:

This position requires the equivalent of a high school diploma, plus one to three years of kitchen experience in the foodservice industry. ServSafe certified preferred; must be able to pass criminal background and drug test.

Preferred Knowledge, Skills, and Abilities:

- Must be able to read, write and follow oral and written instructions at a level necessary to accomplish this job
- Must have the ability to learn basic safety and sanitation skills
- Ability to work independently in order to organize and prioritize workload
- Assist in the preparation of meals by performing salads, soups, sauces and preparation of ingredients for entrees and helps cooks with various tasks as needed.
- Clean and sanitize production equipment, work surfaces and stations
- Maintain safety and sanitation standards on the job.
- Measure ingredients required for specific food items being prepared.
- Operate large-volume cooking equipment such as grills, deep-fat fryers, or griddles.
- Understands and complies consistently with our standard portion sizes, cooking methods, quality standards, kitchen rules, policies and procedures.
- Attends all staff schedule meetings and bring suggestions for improvements.
- Ability to be responsible for schedule, care of uniforms and other equipment

- Good interpersonal and customer service skills

Skills Developed in this Position:

- Oral and written communication
- Judgment
- Flexibility
- Dependability
- Responsibility
- Honesty
- Customer focus
- Self-motivation
- Professional approach
- Reliability

General Responsibilities:

Under the direction of the Executive Chef, this position is to assist in the successful culinary operation. The prep-cook serves as the primary assist for all preparation of products. Involved with culinary operation including adheres to HACCP guidelines to ensure efficient, safe and sanitary food production, preparation and presentation. Proficient in the following: Preparation of all types of food, wash, peel, cut, and seed fruits and vegetable, season and cook food according to recipes, test food to determine if they have been cooked sufficiently, using tasting, smelling or piercing foods, weigh, measure and mix ingredients according to recipes using various kitchen utensils and equipment, understand quality of received products, create decorative food displays, portion, arrange and garnish foods, knowledgeable in equipment used to perform essential functions of the job.

Working Conditions:

The work environment characteristics described here are representative of those an employee encounters while performing the essential functions of the job. Be prepared to work in hot, wet, humid, loud environment for long periods of time. Be able to walk, stand, use finger, talk, hear, lift, kneel, reach, bend and stoop. The employee must occasionally lift and or move up to 50 pounds. The conditions can be fast paced requiring complete action. Food service requires that you must be alert in order to avoid problems. Employee must be willing to work evenings, weekends and holidays.

Job Description: Production Worker

Working Title: Production Food Service Worker

Accountable to: Manager

Operation: Residential Restaurant Operations

Pay Range: Starting wage \$ 6.75 depending on experience

Range of possible scheduled hours: 1st or 2nd shift demanding on needs of operation

Summary of Position:

Employee must be able to be creative, innovative, self-motivated individual in the preparation and service of foods, including the c-store, the athletic training table and other retail areas. To ensure production of desired quality and necessary quantity of food. To be responsible for standardized recipes and menu items.

Qualifications:

The ideal candidate must have a strong commitment to teamwork, customer service, excellent communication and interpersonal skills to prepare for current and future changes. Minimum of one year full-time experience in food preparation and distribution, methods, techniques and terminology used in food service operations is required. Some experience in banquet planning, working in a large-scale food service, and retail operations preferred. ServSafe certified preferred; must be able to pass criminal background and drug test.

Preferred Knowledge, Skills, and Abilities:

This list contains KSAs that are typically associated with the job. It is not all-inclusive and may vary from position to position.

- Ensures that food is maintained at appropriate temperatures. Covers and stores leftover food, records serving temperatures and leftover quantities.
- Prepares salads and garnishes and assists in basic food preparation or ordering.
- Destroys or disposed of outdated, sensitive documents, blank warrants, expired food stamps, etc., in a manner appropriate for the sensitivity.
- Cooks, bakes, or serves regular and/or special meals to clients and/or staff.
- Coordinates an inventory management system to effectively control and distribute supplies and equipment.
- Cleans, sterilizes and or disinfects areas and/or equipment.

- Assists customers in finding products, making selections and purchasing items.
- Other tasks as assigned.
- Clean work areas, equipment, utensils, dishes, and silverware.
- Prepare a variety of foods according to customers' orders or supervisors' instructions, following approved procedures.
- Package take-out foods and/or serve food to customers.
- Inform supervisors when supplies are getting low or equipment is not working properly.
- Weigh or measure ingredients.
- Assist cooks and kitchen staff with various tasks as needed, and provide cooks with needed items.
- Wash, peel and/or cut various foods to prepare for cooking or serving.
- Ability to read and write.
- Ability to follow routine verbal and written instructions.
- Ability to understand and follow safety procedures.
- Ability to safely use cleaning equipment and supplies.

Skills Developed in this Position:

- Oral and written communication
- Judgment
- Flexibility
- Dependability
- Responsibility
- Honesty
- Customer focus
- Self-motivation
- Professional approach
- Reliability

General Responsibilities:

Under the direction of the manager, this position is to assist in the successful daily production operation within the department. The food service worker serves as the primary assist for all preparation of products and other related duties. They are involved with adhering to HACCP guidelines to ensure efficient, safe and sanitary food production, preparation and presentation. Proficient in the following: Preparation of all types of foods, communication, reading and writing skills. Must be knowledgeable in equipment used to perform essential functions of the job.

Working Conditions: Can lift and carry up to 50 lbs. Is exposed to a wide range of environmentally uncontrolled conditions. Must be able to stand for long periods of time. Spend time making repetitive motion. Must be able to work with others.

Appendix M: Competency for Cook

Name: Job Title: Cook		Proficiency: C = Competent N/E = Needs Education N/A = Non Applicable			Remarks:			
Competency		Resource Tool	Proficiency*			Retraining		Date & Verified By
			C	N/E	N/A	C	N/E	
1	Infection control/Hand washing.	Infection Control Manual						
2	Knows and practices appropriate role during emergencies.	RRO P & P Department P & P						
3	Knows location and appropriate use of MSDS forms.	MSDS						
4	Knows Mission Statement.	RRO P & P						
5	Incident reporting procedures.	RRO P & P Department P & P						
6	Accident reporting procedures.	RRO P & P Department P & P						
7	Abides by department Uniform Policy.	Wears uniform						
8	Practices Right to Know and Safety Procedures.	RRO P & P Department P & P						
9	Practices appropriate waste handling.	Department P & P						
10	Practices appropriate phone etiquette.	Answering phone						
11	Wears identification badge.	ID badge						
12	Demonstrates positive customer service skills.	Supervisor's assessment						
13	Demonstrates team approach.	Supervisor's assessment						
14	Practices confidentiality.	RRO P & P Department P & P						
15	Communicates appropriately to supervisor and co-workers.	Supervisor's assessment						
16	Appropriately and consistently uses protective equipment.	RRO P & P Department P & P						
17	Demonstrates age specific knowledge.	RRO P & P Department P & P						
18	Monitors amount of food for cafeteria.	Production Sheets CBORD						
19	Reads, understands and follows standard food recipes.	Supervisor's assessment						

Appendix M: Continued

Competency	Resource Tool	Proficiency*			Retraining		Date & Verified By
		C	N/E	N/A	C	N/E	
20 Knows how to use all of the following equipment:							
A. Grill	Demonstrates use						
B. Steamers	Demonstrates use						
C. Convection ovens	Demonstrates use						
D. Food processor	Demonstrates use						
E. Mixer	Demonstrates use						
F. Steam kettles	Demonstrates use						
G. Alto Sham	Demonstrates use						
H. Knives	Demonstrates use						
21 Uses proper portion control.	In-service training						
22 Understands nutrition as related to food production.	In-service training						
23 Prepares food products and maintains at proper serving temperature.	Temperature Log						
24 Utilizes leftovers, maintaining quality and presentation.	Supervisor's training						
25 Practices safe food handling techniques at all times.	Supervisor's observation Department P & P						
Additional Comments:							

I have reviewed and understand the above competencies.

Employee Signature

Date

Manager Signature

Date

Appendix N: Survey

Safety For Thought

Your Safety is the #1 Concern for the Residential Restaurant Operations.

Directions: Please answer the three part survey by using your mouse to click on the best response to each question based on your knowledge in workplace safety. This survey will be used to assess the current skill levels and training needs of the food service employees of the UWM Residential Restaurant Operation pertaining to safety.

Section A:

1. A food service employee needs to transport six cases of croissants to the deli department. The best way to perform this task is by using
 - Dollies
 - Lifting and moving products by hand
 - A hand cart with a defective wheel
2. John spilled oil on the floor. The first action he should take is to
 - Call custodian
 - Sprinkle salt over the spill
 - Enclose the area with safety signs and other precautionary measures
3. Jamie is told to slice roast beef on the slicer but is afraid of hurting herself on the sharp blade. What safety equipment should be available to Jamie to avoid minor injuries?
 - Machine guard
 - A hand guard
 - An adjustable slide
4. Karen needs to look for information on how to handle and use food service chemical products. Where would she look?
 - Google it
 - Material Safety Data Sheet
 - Policy and Procedural manual
5. The safest way for Susan to move a trolley or a bin is to
 - Push it
 - Pull it
 - Do both in different intervals
6. Jeremy needs to lift a 50 lbs item off of floor. The safest way to lift is to
 - Bend your knees
 - Use your forearms for strength
 - Lift and bend by using your back

7. The best method to use when cleaning the blades on equipment is
 - Wipe with a stroking motion away from the blade edges
 - Never attempt to cleaning any piece of equipment unless you have been properly trained
 - Both methods are correct

8. Sarah is cooking sauce on a stove top. Which one of the statements below is incorrect?
 - Make sure that the handles do not extend over the edge of the stove
 - Make sure the lid is lifted towards the back of the pot to prevent steam burns
 - Make sure to use a wet potholder instead of dry potholders

9. Kitchen Safety can be caused by
 - Creating unsafe conditions and not paying attention
 - Ignoring hazards and doing unsafe practices
 - Both statements are incorrect

10. John cut his finger while slicing vegetables on a cutting board. He should
 - Report the accident to his supervisor
 - Fill out an accident report
 - Both statements are correct

Section B:

Please respond to each statements based on your opinion on safety.

1 = SD = Strongly Disagree 2 = D = Disagree 3 = U = Undecided		4 = A = Agree 5 = SA = Strongly Agree				
Statement	Response					
1. The department has safe systems of work relevant to the employee's job/tasks and workplace. (Work methods, processes, practices and procedures)	SD	D	U	A	SA	
2. You know how to notify and correct hazards, where applicable.	SD	D	U	A	SA	
3. The department sufficiently informed employees about new developments in safety.	SD	D	U	A	SA	
4. There is adequate space for employees to perform duties without been injured.	SD	D	U	A	SA	
5. Safety equipment and resource are easy to find when I need them.	SD	D	U	A	SA	
6. Workers know who to talk to about accidents and know how to file reports.	SD	D	U	A	SA	
7. A safety manual would promote safety and reduce accidents.	SD	D	U	A	SA	
8. A daily inspection on workplace safety would reduce accidents.	SD	D	U	A	SA	
9. Posting a monthly safety record would help reduce accidents.	SD	D	U	A	SA	
10. The department has a method for workers to report accidents and near misses.	SD	D	U	A	SA	

Section C:

1. Which of the following best describes you?

- Student
- Student Manager
- Civil Servant
- Manager

2. What is your gender?

- Male
- Female

3. How many years have you been in food service?

- 1 to 2 years
- 3 to 5 years
- Over 10 years

4. Are you ServSafe Certified?

- Yes
- No

5. Do you have other safety certifications?

- Yes
- No

Appendix O: Consent Form

University of Wisconsin-Milwaukee
Residential Restaurant Operations
Milwaukee, WI 53211 Phone: (414) 229-6307

November X, 2006
XXXX
XXXX N. Maryland Avenue
Milwaukee, WI 53211

Dear XXXX:

I understand that this survey is strictly voluntary and by filling out and returning the survey I am giving consent to participate in the study. I understand the purpose of the study is to help identify the problems and identify possible solutions to the study. I understand that the information being sought from myself will be kept confidential. I am aware that I have the right to refuse to participate.

If you have any questions or concerns about this case, they can be directed towards Jill Arroyo at 414-299-6307 or via email at JillM@aux.edu.uwm.

Filling out the survey verifies that I am 18 years of age or older, in good mental, good physical condition and I agree to and understand the above conditions.

Sincerely,

Jill Arroyo

Jill Arroyo, Residential Restaurant Operations, Director
3400 N. Maryland Avenue
Milwaukee, WI 53211
414-229-6307
JillM@aux.edu.uwm.

Appendix P: Notification Letter

University of Wisconsin-Milwaukee
Residential Restaurant Operations
Milwaukee, WI 53211 Phone: (414) 229-6307

November X, 2006
XXXX
XXXX N. Maryland Avenue
Milwaukee, WI 53211

Dear XXXX:

In the next two weeks, you will be receiving an on-line survey from UW-Milwaukee Residential Restaurant Operations called "Safety for Thought". This survey will contain information on job safety. Your input can greatly improve workplace safety in your workplace setting. Once you receive the survey please E-mail it promptly. The data gathered from the survey will be an important tool in job safety.

Please remember all information provided will be in confidence. I hope you can take a few minutes out of your day to complete and return the on-line survey. The results of this research survey will be available to you. You may receive a summary of the results by emailing me your name and email address and indicating that you would like a "copy of results requested." However, please do not put information on the on-line survey. This survey is for my Master's thesis, If you have any question about the study please call Sue Foxwell at UW-Stout at 715-232-2477 or E-mail foxwells@uwstout.edu

Thank you for your assistance.

Sincerely,

Jill Arroyo
Jill Arroyo, Residential Restaurant Operations, Director
3400 N. Maryland Avenue
Milwaukee, WI 53211
414-229-6307
JillM@aux.edu.uwm.

Appendix Q: IRB



Stout Solutions • Research Services
152 Voc Rehab Building

University of Wisconsin-Stout
P.O. Box 790
Menomonie, WI 54751-0790

715/232-1126
715/232-1749 (fax)
<http://www.uwstout.edu/rps/>

Date: November 29, 2006

To: Jill Arroyo

Cc: Joe Benkowski

From: Sue Foxwell, Research Administrator and Human Protections Administrator, UW-Stout Institutional Review Board for the Protection of Human Subjects in Research (IRB)

Subject: Protection of Human Subjects

Your project, "*Job Safety: Applying Critical Techniques to Job Safety for Residential Restaurant Operations*," has been approved by the IRB through the expedited review process. The measures you have taken to protect human subjects are adequate to protect everyone involved, including subjects and researchers.

Please copy and paste the following message to the top of your survey form before dissemination:

This research has been approved by the UW-Stout IRB as required by the Code of Federal Regulations Title 45 Part 46.

This project is approved through November 28, 2007. Modifications to this approved protocol need to be approved by the IRB. Research not completed by this date must be submitted again outlining changes, expansions, etc. Federal guidelines require annual review and approval by the IRB.

Thank you for your cooperation with the IRB and best wishes with your project.

***NOTE: This is the only notice you will receive – no paper copy will be sent.**

Appendix R: Cover Letter

University of Wisconsin-Milwaukee
Residential Restaurant Operations
Milwaukee, WI 53211 Phone: (414) 229-6307

November X, 2006
XXXX
XXXX N. Maryland Avenue
Milwaukee, WI 53211

Dear XXXX:

I recently sent you a letter about an on-line survey that you will be receiving concerning the job safety at University of Wisconsin Milwaukee Residential Restaurant Operations. Attached is the survey. Your name was randomly selected as one of the 160 participants in this project. Your responses to this questionnaire will be used to identify ways to reduce accidents in the workplace. Your input is needed to help provide the UW Milwaukee's Residential Restaurant Operations.

The results of the survey will help to:

- Determine a level of safety knowledge.
- Determine a need for training and safety manual.
- Identify any job hazards in order to identify why accidents occurred.
- Understand how to report any hazard, job-related injury or illness.
- Identify preventive safety through job redesign or equipment.

Please use your experiences to respond to the questions. This process will not take any more than 15 minutes to complete. If you are interested in the results from the questionnaire, please let me know either by email or phone. All responses will be kept confidential.

Thank you for taking the time to fill out the questionnaire. This survey is part of my Master's program at UW-Stout. If you have any questions, please feel free to contact me at 414-229-6307 or Sue Foxwell at UW-Stout 715-232- 2477 or E-mail foxwells@uwstout.edu

Sincerely,

Jill Arroyo
Jill Arroyo, Residential Restaurant Operations, Director
JillM@aux.edu.uwm

Appendix S: Follow up Letter

University of Wisconsin-Milwaukee
Residential Restaurant Operations
Milwaukee, WI 53211 Phone: (414) 229-6307

November X, 2006
XXXX
XXXX N. Maryland Avenue
Milwaukee, WI 53211

Dear XXXX:

On November XX I e-mailed you a survey concerning UW Milwaukee Residential Restaurant Operations safety. If you e-mailed back the survey I thank you. If you did not please take a few minutes to complete the attached survey, response from each participant is important to insure that issues being addressed in the survey reflect the majority. Please complete the survey and return it to me by November XX, 2006. .

I hope you choose to accept my invitation to participate in the completion of the on-line survey and return it to me. If you have any questions or concerns, I will be happy to answer any of your needs. If you have any question you can contact Jill Arroyo or Sue Foxwell at UW-Stout 715-232-2477 or E-mail foxwells@uwstout.edu

Thanks for taking the time to complete the survey.

Sincerely,

Jill Arroyo
Jill Arroyo, Residential Restaurant Operation, Director
XXXX N. Maryland Avenue
Milwaukee, WI 53211
414-229-6307
JillM@aux.edu.uwm

Appendix T: Thank You Letter (Interview)

University of Wisconsin-Milwaukee
Residential Restaurant Operations
Milwaukee, WI 53211 Phone: (414) 229-6307

November X, 2006

Mr. XXXX
XXXX N. Maryland Avenue
Milwaukee, WI 53211

Dear XXXX:

Thank you for taking time to let me interview you regarding the UW- Milwaukee Residential Restaurant Operations. I found your information extremely valuable. Being able to talk to you on a personal level was informative and educational. You may receive a summary of the results by emailing me your name and email address and indicating that you would like a “copy of results of the interview.” I would be happy to supply the data from the results to you.

Thank you again for giving me this valuable learning experience and answering all my questions and the generosity and patience you gave in helping me explore your job. If you have any questions concerning this research project please let us know.

Sincerely,

Jill Arroyo
Jill Arroyo, Residential Restaurant Operations, Director
XXXX N. Maryland Avenue
Milwaukee, WI 53211
414-229-6307
JillM@aux.edu.uwm

Appendix U: Thank You Letter (Survey)
University of Wisconsin-Milwaukee
Residential Restaurant Operations
Milwaukee, WI 53211 Phone: (414) 229-6307

November X, 2006

Mr. XXXX
XXXX N. Maryland Avenue
Milwaukee, WI 53211

Dear XXXX:

Thank you for taking the time to fill out the Safety Survey. The information you provided will help strengthen UW- Milwaukee's Residential Restaurant Operations safety procedures.

You may receive a summary of the results by emailing me your name and email address and indicating that you would like a "copy of results of the survey." I would be happy to supply the data from the results to you.

Thank you again for this valuable learning experience and answering all the survey questions.

Sincerely,

Jill Arroyo
Jill Arroyo, Residential Restaurant Operations, Director
XXXX N. Maryland Avenue
Milwaukee, WI 53211
414-229-6307
JillM@aux.edu.uwm