

KNOWLEDGE DEFICITS IN MANUFACTURING AND THEIR EFFECTS  
ON NEW EMPLOYEES

by

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A dissertation submitted to the Graduate Council of  
Texas State University in partial fulfillment  
of the requirements for the degree of  
Doctor of Philosophy  
with a Major in Adult, Professional and Community Education  
May 2014

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## **ACKNOWLEDGEMENTS**

First and foremost I thank God for that extra set of footprints in the sand throughout my journey of completing this dissertation. I acknowledge that it was God who allowed me to meet all requirements of the program. Also, this dissertation could not have been finished without the help of my husband, spirit of my mother, my dissertation chair and committee, and my Human Resources staff. It is my great pleasure to acknowledge people who have given me guidance, help, encouragement and who believed in me.

I begin with a very special thank you to my husband, Lee Ross Jr.—one who I am blessed with, and who went above and beyond in supporting me throughout my study. I thank him for his prayers, unwavering love, devotion, encouragement, inspiration and quiet patience which have been the solid foundation upon which the past four and a half years of my life have been built. I thank him for putting his life on hold while he waited for me to join him full time again. I thank him for allowing me to be as ambitious as I wanted. He is the wind beneath my wings.

I thank my mother, Addie Lee, who passed away as I began my doctoral studies, for her faith in me. It was under her upbringing that I gained so much drive and tenacity to tackle challenges head on. Her spirit is a driving force in my life.

I would like to express my gratitude to my dissertation chair, Dr. Ann Brooks, for her constant guidance during my research, endless suggestions, personal attention, full

support, and time despite her already heavy loads of responsibility. I never imagined learning so much from one individual. Thanks to my committee members for their suggestions, time and service despite their other obligations. Their suggestions were invaluable to me in developing the study.

Also, I express gratitude to my Human Resources staff— Bret, Laurel, Denise, Martha, Dwayne and Jaime who provided support, constant encouragement and understanding when I had to leave them to attend classes. Also, thanks to Alfred for allowing me the opportunity to study his department. Without their dedication, it would have been difficult to endure. Finally, I thank my Pastor, Reverend Vernon James Garza, for his constant reminder that “For unto whosoever much is give, of him shall be much required” (Luke 12:48, King James Version).

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## **ABSTRACT**

The purpose of this study was to explore the learning experiences of new employees and the influence that knowledge deficits have on their performance and on safety within an organization that is experiencing a massive loss of knowledge due to downsizing, attrition, and turnover. There were three research questions: (1) How does knowledge deficit influence the learning experiences of new hires? (2) How does knowledge deficit influence the performance of new hires? (3) How does knowledge deficit influence safety in the organization?

The study was addressed from an interpretive paradigm. A qualitative case study methodology was used to examine one department in a south Texas fortune 500 company that supplies alumina to the organization's global production system. The global production system is the largest network of refineries and smelters in the world. Primary data sources were in-depth interviews with 10 hourly production workers and internal documents.

Findings revealed that knowledge deficit had a negative influence on the learning experience and performance of new employees. This, in turn, resulted in a negative influence on three of the organization's key drivers – people, profitability, and knowledge. Knowledge deficit also had an influence on the safety in the organization even though the leaders of the organization put safety first in all of their decision making processes. Also the corporation has been recognized as having best practices in safety.

## **CHAPTER I**

### **Introduction**

The economic downturn of the last few years has caused employers to make tough decisions in regard to their headcount. The tough question of whether or not to start reducing staff in order to reduce cost is typically a paramount decision that most leaders make. What happens to the knowledge base of an organization when someone exits due to layoff, retirement, or attrition? Is their loss felt?

For more than three decades, the concept of employee downsizing has been an integral part of organizational transformation and has gained strategic legitimacy as a reorganization strategy (Chadwick et al., 2004). Despite employee downsizing widespread use as a strategic initiative, strategic human resource management (SHRM) has no general consensus on the relationship between employee downsizing and organizational performance and knowledge. (Schmitt, Borzillo, & Probst, 2011, pp. 55-56)

Research has found that knowledge is one of the most important sources of competitive advantage (Hitt, Bierman, Shimizu, & Kochhar, 2001). However, when some companies (more specifically those that are unionized) are faced with financial difficulty, they do not always have the ability to keep high caliber employees that are highly trained. Companies that are unionized are typically obligated, according to their labor contract, to lay off employees based on seniority. This hinders the organization's ability to retain high caliber employees that have low seniority. It is the high caliber employees that possess rare or difficult-to-imitate knowledge which makes them important to the organization's success. Determining what happens when these valuable

employees leave may help us to better understand the impact of knowledge loss and formulate appropriate action (Massingham, 2008).

When an employee leaves an organization, there is a perception that it does not pose a significant problem in terms of knowledge loss as long as human resources management recruits new employees as replacements, or provides training for existing employees. Massingham (2008) noted three organizational developments that prompted questioning of this thought process:

First, researchers argue that knowledge is now the organization's most valuable resource (Grant, 1977; Zack, 1999). Employees with valuable knowledge may be unique or difficult to imitate, making replacement difficult. Second, the employee turnover rates are increasing (Arthur and Rousseau, 1996) and often, employees are not replaced. This suggests a reduction in the organization's overall knowledge, because the stock of knowledge resources is not replenished. Third, the average age of the workforce is increasing. Over the next 18 years a baby boomer will reach retirement age every 18 seconds (Beazely et al., 2002). This means that organizations are increasingly at risk of losing valuable human capital. (p. 542)

These developments are consistent with what I observed in the attrition data and consistent with reports I received from upper management in my role as researcher. Managers reported that it is difficult to replace employees with unique skills (i.e. instrumentation and electrical technicians). Also, headcount budgets do not allow replacement of all who exited the organization.

To summarize, research supports the view that downsizing reduces overall knowledge in an organization and that the loss of knowledge due to downsizing reduces productivity. However, to further examine the influence of knowledge loss, we need to examine how

knowledge deficit influences the learning experiences and performance of those hired to replace employees who exit the organization. Some important information for measuring the influence of knowledge loss on an organization experiencing knowledge deficit are (a) identifying and understanding how employees learn, (b) identifying and understanding the approaches to learning provided to them, and (c) knowing whether or not the replacement employees can contribute to achieving personal and organizational goals.

### **Background of the Researcher**

Having worked in the field of human resources for much of my career, I have been employed at a large refinery for 33 years and have been part of numerous restructuring initiatives, though not in a decision making position. In my current management role, I am accountable for all restructuring initiatives. Since future downsizing strategies will be initiated by me; I want to be informed of possible processes to put in place to close the knowledge gap that typically results from downsizing. This has motivated me to select my current organization as a site for research. Since future downsizing strategies will be initiated by me; I want to be informed of possible processes to put in place to close the knowledge gap that typically results from downsizing.

I have established strong relationships at all levels in the organization. These relationships are built first and foremost on honesty and integrity - values that guide all of my actions and decisions. A major part of my belief system in supervising is that the ideas, suggestions and talents each employee brings to the workplace are imperative in order to provide superior service. Because of this, I find great worth in the capability, power, and potential of each employee. I listen, communicate and support employees to engage them in performing to their optimal level. I believe this approach should allow research participants to feel comfortable

and non-threatened during the interviews so that they can speak openly about their perceptions, thoughts, and feelings. In addition, having established a good rapport with two key stakeholders, namely the plant manager and the business unit human resources manager, provides me the support and interest needed to explore the learning experiences of the new hires and the implications knowledge deficit has on them.

As an insider researcher, I acknowledge that my role has advantages and disadvantages. Since I am very familiar with the studied organization, it makes things considerably easier in terms of selecting a sample for the study. Being an insider also allows me to collect richer data because I have easy access to people and information that can further enhance my knowledge. For example, I am able to access personnel and training documents that will be reviewed as part of the study. I am aware of various elements of the research field, and hence was able to take advantage of this knowledge in order to pursue the research aims (Bartlett & Burton, 2009). A final key advantage of being an insider researcher is the learning process it provides. Reflecting on my current practice and adoption of a reflexive approach to my study are crucial aspects of learning in work-based projects (Costley, 2010). For example, although I am familiar with the field, I will have to spend time self-reflecting to try not to overlook aspects of the data which an outsider possibly would have acknowledged. Self-development in this area includes understanding my professional self in relation to my personal self.

In terms of disadvantages, as an insider researcher, I may have the tendency to take things for granted based on familiarity with the surroundings. Also, my position as human resources manager is viewed by some as a position of power. In reflecting on whether or not this position would influence the research, I took a “step back” from the study and critically reflected on my character, expertise, relationships and my interpersonal skills (in past managerial training,

I was taught to focus on these four points as ways to be influential without abusing power). This critical reflection involved meeting with the union leadership to discuss whether or not they felt that negative issues would arise from their membership, given my dual role as researcher and manager at the site. I asked questions based on the following questions that are related to the four points above:

1. How am I viewed by employees in terms of being seen as being trustworthy, respectful, and collaborative?
2. How are the goals I set for the organization viewed? Is the logic for the goals clear?
3. How are my relationships with employees perceived?
4. What insight can you provide me with concerning my interpersonal relationships to others?

Feedback was overwhelmingly positive. Union leadership was supportive of me conducting the research and did not believe that employees should or would feel threatened in any way by participating in the study. It is known to everyone in the plant that knowledge deficit is the most important thing that must be addressed in order for the location to be successful. Employees understand that the closing of the knowledge deficit gap of new employees falls within my area of accountability and numerous employees have volunteered to assist in whatever way is needed to close the gap.

Despite this, I must also acknowledge that no matter how I feel and what I have been told about being accepted as an insider, I will always be somewhat of an outsider simply by virtue of my position and collecting data about other people. However, throughout the study I did not have any concerns about employees feeling any level of threat. I was able to obtain rich data to support my original two questions:

1. How does knowledge deficit influence the learning experiences of new hires?
2. How does knowledge deficit influence the performance of new hires?

Based on the reports concerning safety from the participants, I added a third question that would add value to the study - namely,

3. How does knowledge deficit influence safety in the organization?

### **Background of the Organization**

The answers to these research questions are pursued here through an instrumental case study of a large fortune 500 company in south Texas which supplies alumina, the compound from which aluminum is made, to the organization's global production system. The global production system is the largest network of refineries and smelters in the world. The company's own internal research on employee statistics now indicates that it is experiencing a massive knowledge loss since 2011. The internal attrition data in 2000 suggested that the average age of employees at this south Texas fortune 500 company was 47 years, and the average years of service were 20 years.

Beginning in January 2001, alumina operations were challenged like never before. The worldwide economic uncertainty and operation costs in producing alumina impacted the ability to compete with other refineries. The organization was faced with having to fundamentally change the operating structure to meet its challenge of being identified as a swing plant (having the flexibility to go up and down according to market demands) in the global system.

To achieve this new structure, fewer employees were necessary. In the previous year (2000), salaried employees were reduced by 46%. While there were reductions in the hourly workforce, additional hourly reductions were necessary. In an effort to minimize the impact, a voluntary quit package was developed for a limited number of employees based on a quota by



specific job classification in an attempt to minimize any necessary layoffs. The fortune 500 company announced the voluntary quit package for a limited number of hourly employees and 43 employees accepted the offer. The plan design entitled those that quit \$10,000 plus \$325 for each full year of service. Those employees who accepted the package and were retirement eligible retired.

In 2004 and 2008, the refinery was affected by the same cost challenges and decreased demand for its product. Thus, management saw the need to take the difficult step of reducing the workforce even further. They determined that workforce reductions would involve approximately 40 salaried employees and approximately 60 hourly employees.

In addition to the layoffs and acceptance of voluntary quit packages, the organization faced a wave of retirements between 2000 and 2010. The number of employees decreased from 878 to 525 employees as a result. The organization was faced with institutional knowledge deficit as Baby Boomer retirements created a major turnover in personnel. "Turnover can cost a company anywhere from \$10,000 per employee to as much as 200 percent of the employee's compensation" (Columbia, 2004, p. 2). The knowledge loss affected the organization's bottom line and the bottom line was impacted by the previous dollar amount until a replacement was hired and fully trained. Turnover costs can include orientation, recruiting, training and the resources required to bring an employee onboard - and the cost of lost productivity arising from the fact that employees are less effective while learning a new job and becoming familiar with the organization's culture (Karsan, 2007).

The employees, including those who retired, who were laid off and/or who received voluntary quit packages, had accumulated years of company-relevant knowledge, experience, and social contacts that help maintain organizational efficiency and improve an organization's

competitive advantage in this global economy (McGrill 2006; Rose, 2006). Loss of knowledge capital can destabilize an organization because when knowledge-workers leave, they take their skills, knowledge, and experience with them (Aiman-Smith, Bergey, Cantwell, & Doran, 2006). When these knowledge-workers left, so did their organizational experience and expertise.

### **Site Selection**

I selected the organization to which I am employed because of its current condition: dealing with knowledge deficit due to downsizing, attrition, and turnover. The organization is located to the south of Houston, Texas. The organization has been a member of its community since 1948 when it constructed the first aluminum production facility. Since 1980 however, alumina has been the facility's primary product. Cost challenges and decreased demand for its product has affected the organization over the years. Unfortunately, because of these business conditions, there was a need to reduce its workforce further. Some of the current issues are as follows:

1. The organization made training and development of its employees one of its top goals. In order to accomplish this goal, knowledgeable experienced human resources are required.
2. It takes approximately 9-12 months to train a production employee.
3. Management is extremely concerned that there are not enough skilled workers to operate the plant efficiently and safely.
4. The organization now has to invest significant amounts of time and resources to recreate or replace this lost knowledge since approximately 1/3 of the workforce consist of employees with one to three years of service.

## **Problem Statement**

Internal statistics from the organization studied indicate that the facility would experience a massive loss of knowledge by the year 2011. The organization was faced with worldwide economic uncertainty, baby boomer retirements, cost challenges and decreased demand for its product. Therefore, it was faced with having to fundamentally change the operating structure to meet its challenges. The new structure meant fewer employees. The knowledge workers retired and or were laid off and when they left, so did their organizational experience and expertise.

## **Research Rationale**

Current literature findings highlight the fact that many downsizing initiatives fail to retain critical skills, capabilities, experience and knowledge. Initially, downsizing was heralded as a solution providing organizations with a way to increase productivity. However, research indicates that a vast number of organizations are largely unsuccessful in meeting the objective of increasing productivity (Griggs, 2003). A national survey found that 75% of those companies which downsized believed that performance did not improve (Meuse, Bergmann, Vanderheiden, & Roraff, 2004).

In addition, research suggests that downsizing results in a reduction in the organization's overall knowledge (Massingham, 2008). It was reported that the loss of key individuals may mean that some knowledge is effectively lost forever (Ashworth, 2006). Consequently when workers leave, organizations lose two critical elements: (a) someone to do a job and (b) the accumulated knowledge and expertise that the person takes out the door with him or her (Rainer, Jens, & Fahlander, 2008). Researchers also identified a range of negative impacts caused by knowledge loss including reduced organization output and productivity (Massingham, 2008).

In short, current literature supports the view that downsizing initiatives reduce productivity. It also supports the view that downsizing reduces overall knowledge in an organization and that the loss of knowledge due to downsizing reduces productivity. However, the literature does not address the influence that knowledge deficit, as a result of downsizing, have on the new employee.

### **Purpose of the Study**

The purpose of this study was to explore the learning experiences of new employees and the influence that knowledge deficits have on their performance within an organization that is experiencing a massive loss of knowledge due to downsizing, attrition, and turnover. In addition, the researcher's purpose is to explore the influence of knowledge deficit on safety in the organization. The intent is to inform future research and to make recommendations both to the organization and to the field of human resources regarding the influence knowledge deficits have on new employees & safety within the context of a downsized organization.

### **Research Questions**

The questions that guided my research are:

1. How does knowledge deficit influence the learning experiences of new hires?
2. How does knowledge deficit influence the performance of new hires?
3. How does knowledge deficit influence safety in the organization?

### **Definition of Terms**

Two terms require definition as a basis for this study: *corporate downsizing* and *knowledge*. Freeman and Cameron's (1993) definition of corporate downsizing is adopted because of its view in "distinguishing downsizing from organization decline, growth in reverse and non-adaptation" (Palliam & Shalhoub, 2002, p. 436). According to Freeman and Cameron

(1993), "...first, downsizing is an activity that members of an organization undertake in a purposeful manner. Second, downsizing typically involves a reduction in personnel. Third, downsizing affects the work processes (directly or indirectly) within an organization" (p 436). The work of Grant (1996) and Nonaka, (1994) is used to define organizational knowledge.

Organizational knowledge, both explicit and tacit in accordance with Grant (1996) and Nonaka, (1994) encompasses the shared, accumulated knowledge of individuals within an organization. Such knowledge is embedded in work processes and resultant products and services that evolve over time, all of which develop to incorporate lessons learned from the organizations' past experience. (p.436)

### **Theoretical Perspective**

I used Community of Practice (CoP) as the theoretical perspective for this study since the organization is facing knowledge challenges of increasing complexity and scale due to downsizing, attrition, and turnover. According to Wenger (2006), community of practice is a concept that has been adopted most readily by people in business because of the recognition that knowledge is a critical asset that needs to be managed strategically. The theorist argues that initial efforts at managing knowledge had focused on information systems with disappointing results and that communities of practice provided a new approach, which focused on people and on the social structures that enable them to learn with and from each other (Wenger 2006). Research suggests that currently, most organizations have some form of community of practice (Lave & Wenger, 1991). A number of characteristics explain interest in communities of practice as a vehicle for developing strategic capabilities in organizations:

- Communities of practice enable practitioners to take collective responsibility for managing the knowledge they need, recognizing that, given the proper structure, they are in the best position to do this.
- Communities among practitioners create a direct link between learning and performance, because the same people participate in communities of practice and in teams and business units.
- Practitioners can address the tacit and dynamic aspects of knowledge creation and sharing, as well as the more explicit aspects.
- Communities are not limited by formal structures: they create connections among people across organizational and geographic boundaries. (Lave & Wenger, 1991).

The Compassion Capital Fund (CCF) National Resource Center reported that one of the benefits of a community of practice is being able to share resources in order to avoid reinventing the wheel. Communities of practice have a desire to pass on experience to younger generations; a community of practice also provides an informal learning environment in which both novices and experienced employees may interact with each other, share their experiences, and learn from each other (Hara 2009). In this sense organizational learning occurs in a community of practice (Hara 2009). Lave and Wenger (1991) suggest that with communities of practice, new employees learn how to master their tasks by being mentored and trained by more experienced employees in the same work unit.

### **Methodology**

To explore the learning experiences of new employees and the influence that knowledge deficits have on their performance and on safety within an organization, I used a qualitative instrumental case study approach. I began the study with data collection from documents,

interviews, and field notes. All the interviews were audio recorded and the recordings converted to verbatim transcriptions. Findings were based on interview data from 10 employees of a fortune 500 company that is experiencing a loss of knowledge due to downsizing, attrition, and turnover. Findings were also based on documents and records such as employee verification reports, training evaluation sheets, injury reports, classroom curriculum, journal notes, corporate values statements, corporate strategic statements, and statements from leaders in the organizations.

### **Significance of the Study**

This study aims to understand the learning experiences of new employees and the impact that knowledge has on their performance within an organization that is experiencing a massive loss of knowledge due to downsizing, attrition, and turnover. It also aims to understand the impact knowledge deficit has on safety in the organization. The study is significant in three ways. First, despite the research suggestions that downsizing initiatives fail to retain critical skills, capabilities, experience and knowledge, it appears that the downsizing strategies of the organization being studied have not changed. Instead strategies continue to be focused on the reduction of the organization's size without the interrelationship between downsizing and knowledge retention to avoid knowledge deficit.

Second, despite research efforts to date, the learning experiences of new employees within an organization that is experiencing a massive loss of knowledge due to downsizing remains an immature field, lacking integrative initiatives. Since this study fills a critical gap in the literature by examining employee learning in a downsizing context, data collected will have significance for practitioners in the human resource development field.

Third, this study is important to the global corporation because the intent is to highlight the potential risk of knowledge deficit in relation to the learning experience of new employees and the impact it has on their performance. The intent is also to raise awareness of the importance of combining knowledge retention and employee downsizing. These recommendations will ensure the future of knowledge management during downsizing to minimize the risk of knowledge deficit and its influence on the learning experiences and performance of new employees.



## **CHAPTER II**

### **Review of the Literature**

The literature review for this research study lay in the context of knowledge deficit as a result of downsizing and its effects on new employees – specifically on their learning experiences and performance. Research supports the view that downsizing initiatives reduce productivity. It also supports the view that downsizing reduces overall knowledge in an organization and that the loss of knowledge due to downsizing reduces productivity. However, the literature does not address the effects that knowledge deficits have on new employees as a result of downsizing. Instead, it is limited largely to reasons for downsizing, and the effects downsizing has on the demassed and surviving employees.

The review serves three key purposes for this study. First, it confirms why this study is needed: Apparently no one has previously examined organizational downsizing to identify the implications on the learning experiences and performance of new employees. Second, it explains why it is important to identify and reinforce the implications downsizing has for new employees' performance and learning to the field of human resources development. Third, this literature review helps develop the context for the study which follows—specifically, building a relationship between downsizing and new employees' performance and learning experiences.

The research questions used to guide this study are:

1. How does knowledge deficit influence the learning experiences of new hires?
2. How does knowledge deficit influence the performance of new hires?
3. How does knowledge deficit influence safety in the organization?

## **Organization of the Chapter**

The review expands on the areas of knowledge and learning in organizations. In the section on knowledge, I present literature on understanding knowledge and knowing and how they are conceptualized in organizations. I also present literature on organizational knowledge in the context of workforce reduction, and literature on knowledge and performance in organizations. In the section on learning, I will outline methods and approaches related to how employees learn their jobs, and how workers gain the knowledge that was lost during workforce reductions. I provide summaries within each subsection and a chapter summary of the main ideas to close.

## **Knowledge**

This section outlines researchers' discussions on (a) the concepts of knowledge and knowing as it relates to organizations, (b) organizational knowledge and workforce reduction and (c) knowledge and performance in organizations.

### **Concepts of Knowledge and Knowing**

Many authors have written about knowledge and now there is much discussion of organizational knowledge. Research categories include organizational knowledge, intellectual capital and knowledge creating organization. Cook and Brown (1999) make suggestions about these concepts related to knowledge.

The work rests on a single, traditional understanding of the nature of knowledge which is referred to as understanding the “epistemology of possession” (since it treats knowledge as something people possess. Yet, this epistemology cannot account for the knowing found in individual and group practice. Knowing *as* action calls for an “epistemology of practice.” Moreover, the epistemology of possession tends to show

partiality towards explicit over tacit knowledge and knowledge possessed by individuals over that possessed by a group. (p. 381)

According to Cook and Brown (1999), it has become commonplace to speak of knowledge in the context of both individuals and groups, and even to consider knowledge in explicit and tacit senses. Also, Cook and Brown (1999), point out that there are discussions about how explicit knowledge acquired by individuals in an organization is associated with learning at the level of the organization (Argyris & Schon 1978; Simon, 1991; Sims & Gioia 1986; Sitkin, 1992); how a group's mastering of explicit routines can be an aspect of organizational memory (Cohen & Bacdayan, 1994); and how the tacit skills of an individual can and cannot be tapped for the benefit of the organization (Nonaka, 1994). Knowledge is divided into tacit and explicit categories, and explained as follows:

Although knowledge could be classified into personal shared and public; practical and theoretical; hard and soft; internal and external foreground and background, the classification of tacit and explicit knowledge remains the most common and practical. Tacit knowledge represents knowledge based on experience of individuals, expressed in human actions in the form of evaluation, attitudes, points of views commitment and motivation (Nonaka, et al., 2000). Since tacit knowledge is linked to individuals it is very difficult, or even impossible, to articulate. Explicit knowledge, in contrast, is codifiable knowledge inherent in non-human storehouse, including organizational manuals, documents and databases. Yet, it is difficult to find two entirely separated dichotomies of tacit and explicit knowledge; instead knowledge can fall within the spectrum of tacit knowledge to explicit knowledge (Cook & Brown, 1999).

It is suggested that organizations are better understood if explicit, tacit, individual, and group knowledge are treated as four distinct and coequal forms and if knowledge and knowing are seen as mutually enabling (Cook & Brown, 1999). According to Cook and Brown (1999), for many, such topics as organizational learning, organizational knowledge, or organizational routines are still spoken of in ways that often leave it unclear as to whether groups are being treated on an equal footing with individuals (Cook & Brown, 1999, p.385).

There is a growing body of research that has started to treat groups and organizations in their own right. This has been an implicit concern in our work as well as that of a number of our colleagues at Xerox PARC and the Institute for Research on Learning. This trend is also strongly suggested in the literature treating such concepts as “communities of practice” (Wenger, 1997; Brown & Duguid, 1991) “core competencies” (Hamel & Prahalad, 1994), “situated cognition”, “legitimate peripheral participation” (Lave & Wenger, 1991), and the “spiral of organizational knowledge creation” (Nonaka & Takeuchi 1995). (p. 385)

Community of practice looks at how a group functions by participating in practices that are common to or characteristic of that group and how individuals establish themselves within that group. There is a trend in the body of work on core competencies that shows a focus is given to how the work of teams as well as individuals can be supported and directed. “The concept of legitimate peripheral participation, originally used to explore apprenticeship learning, takes as its central concern the role of participation by seemingly peripheral individuals in the innovative and very central capacities of the group itself” (Cook & Brown, 1999, p. 386).

As it relates to explicit/tacit distinction, Cook & Brown (1999), suggest that individuals and groups each do knowledge related work that the other cannot. They assert that it is not

expected that the body of knowledge is possessed by the group as a whole and that there is not an expectation that every individual in a group possess everything that is in the body knowledge of that group (Cook & Brown, 1999). It is further believed “that knowledge is a tool of knowing, that knowing is an aspect of our interaction with the social and physical world, and that the interplay of knowledge and knowing can generate new ways of knowing” (Cook & Brown, 1999, p. 381). As they conclude:

This generative dance between knowledge and knowing is a powerful source of organizational innovation. Harnessing this intervention calls for organizational and technologic infrastructures that support the interplay of knowledge and knowing. Ultimately, these concepts make a more robust framing of such “epistemologically-centered” concerns as core competencies, the management of intellectual capital, etc. is made possible through these concepts. (Cook & Brown, 1999, p. 381)

In developing an understanding of the knowledge/knowing distinction, authors have found it useful to draw on the work of John Dewey – a work that has generally been viewed as essentially limited to educational settings. Cook and Brown (1999) believe that a new look at John Dewey’s pragmatist perspective can result in very important implications for organizations of all sorts. A fundamental belief of the pragmatist view in both theory and practice is that our primary focus should not be (solely) on the likes of abstract concepts and principles, but on concrete action. When it comes to questions of what we know and how we know, the pragmatist perspective is not primarily concerned with knowledge, which is seen as abstract and static, but with knowing, which is understood as part of concrete human action. Cook and Brown (1999) assert the following about the pragmatist perspective:

For us “knowing something” refers to an aspect of action, not to something assumed to underlie, enable, or be used in action. By ‘knowing’, we mean that aspect of action or practice does epistemic work. Knowing, Dewey maintained is something which we do, not something that we possess...we must see knowledge as a tool at the service of knowing not as something that once possessed, [it] is all that is needed to enable action or practice. (pp. 387-388)

Choo (2001) examined the information processes that support organizational sense-making, knowledge creation, and decision making. At the heart of the knowing organization is its management of information process that underpins sense making, knowledge-creating, and decision making. He suggests that organizational knowing emerges when the three modes of information used are connected to each other to constitute a larger network of processes. Choo (2001) further argues that *sense-making* is precipitated by a change or difference in the environment that creates discontinuity in the flow of experience engaging people and activities of an organization (Weick, 1979).

This provides the raw data from the environment which have to be made sense of.

*Knowledge creating* is precipitated by a situation which identifies gaps in the existing knowledge of the organization or the work group. Such knowledge gaps stand in the way of solving a technical or task-related problem, designing a new product or service, or taking advantage of an opportunity. Decision making is precipitated by a choice situation, on occasion in which the organization is expected to select a course of action. (Cook & Brown, 1999, pp. 198-199)

When the three modes are connected, the organization discovers, shares, and applies new knowledge (Choo, 2001).

## **Knowledge in the Context of Workforce Reductions**

Inefficiencies and/or failure to implement employee downsizing strategies have negative consequences for an organization (Schmitt, Borzillo & Probst, 2011). According to Dougherty and Bowman (1995), one of these negative consequences is the loss of vital organizational memory, as layoffs directly influence a firm's stock of existing knowledge. Organizational knowledge, both explicit and tacit (Grant, 1996) encompasses the shared, accumulated knowledge of individuals within an organization. Such knowledge is embedded in work processes and the products and services resulting from this, all of which develop to incorporate lessons learned from the organizations' past experience. Thus, knowledge lost through downsizing and restructuring requires recreation through organizational learning (Gregory 1999). Consequently, Freeman and Cameron, 1993 have argued that effective employee downsizing efforts should be considered part of the firm's long-term strategy to preserve its critical knowledge for sustainable competitive advantage.

To increase understanding of the effects of workforce reductions on organizational knowledge, studies on organizational downsizing have found that employee downsizing impacts particular aspects of knowledge retention, such as loss of tacit knowledge (Fisher & White, 2000). Also, depending on the number of employees and their value to the organization, losing individuals through employee downsizing carries the risk that the knowledge in those employees' memories may be lost if this is not retained elsewhere within the organization (Fisher & White, 2000). The loss of high quality and knowledgeable employees (key individuals) may mean that some knowledge is effectively lost forever (Ashworth, 2006). It is further suggested that the magnitude of the potential risk of losing knowledgeable workers makes it critical for

managers to analyze the impact of downsizing and knowledge loss before implementing downsizing strategies (Fisher & White, 2000).

To reduce the potential risk of losing knowledgeable workers during downsizing, researchers suggest a full consideration of the employee's knowledge base as part of the selection process. Selection, however, is often influenced by seniority policies and bias, increasing the chances for high quality, knowledgeable employees to be let go (Cornfield, 1983). Also, according to Schmitt et al. (2011), managers should be aware that the way in which they approach and implement employee downsizing affects organizations' ability to use organizational memory.

Other key empirical studies have revealed similar findings concerning the effects on organizational knowledge in the context of workforce cuts. Sitlington and Marshall (2011) examined the impact of downsizing and processes on perceptions of organizational knowledge and effectiveness after downsizing and restructuring events in successful and unsuccessful organizations. One conclusion drawn in their study was that organizations undertaking downsizing should consider the culture and climate of the organization in regard to mechanisms for knowledge retention and how knowledge can be retained, within their implementation strategies. In addition to this, Strack, Baier, and Fahlander (2008) suggested that managers must factor in both the impact of strategic moves on personnel need and the future supply of workers in the market within their implementation strategies.

Williams (2004) investigated whether or not downsizing contributes to, or impedes a firm's intellectual capital performance based on a longitudinal analysis of 56 United States publicly listed companies that downsized their workforce. He concluded that though many justify downsizing as an effective mechanism for improving firm performance and competitive



woes, empirical evidence suggests that downsizing is ineffective in these aims. Downsizing's true effectiveness is further accentuated with the consideration of maintaining knowledgeable individuals (Williams, 2004). As part of the recommendations in Williams' study, he notes that corporate directors and managers should seek alternative strategies with a consideration of knowledge loss rather than immediately downsize their workforce as such action affects intellectual capital (Williams, 2004).

Griggs & Hyland (2003) used an in-depth exploratory case study to examine the issue of organizational downsizing. They interviewed managers and observed the operations of a manufacturing firm, concluding that organizational downsizing may seriously damage the learning capacity of organizations due to knowledgeable workers leaving. The key implication based on their study is that it is not only the loss of intra and intersubjective knowledge and learning which may occur when organizational downsizing takes place, but if the processes and systems that are responsible for establishing levels of knowledge are deficient, then the negative effects of downsizing are not surprising.

Massingham (2010) also reported similar findings from an in-depth case study. He conducted research at the Australian Department of Defense and findings suggest that lost human capital may produce decreased organizational output and productivity; lost structural capital may diminish organizational learning, and lost relational capital may produce disrupted external knowledge flows. The objective of his study was to identify the impact of knowledge loss and to link it to the organization's outcomes. Massingham (2010) examines knowledge loss within the context of intellectual capital theory.

## **Summary**

Clearly, similarities exist among several researchers' conclusions in regard to the effects of organizational knowledge in the context of workforce cuts. For example, Fisher and White (2000), Ashworth (2006), Rainer and Fahlander (2008), Dougherty and Bowman (1995) and Massingham (2008) are consistent in noting that downsizing suggests a reduction in the organizations overall knowledge. Their conclusions are also similar in highlighting that when workers leave, organizations lose someone to do a job and the accumulated knowledge and expertise that this person takes out the door with him (Rainer & Fahlander, 2008). Griggs and Hyland (2003) make note of this as well: one of their study's conclusions was that downsizing damages the learning capacity of organizations due to knowledgeable workers leaving.

The ideas suggested in the research (e.g. by Freeman & Cameron, 1993; Cornfield, 1983; Schmitt et al., 2011) are similar in that they suggest the consideration of employee's knowledge should be done in the selection process to avoid letting go high quality knowledgeable workers. Williams' (2004) empirical study is also similar in that he recommends managers to seek downsizing strategies with consideration of knowledge loss to avoid negative effects of intellectual capital. Sitlington and Marshall (2011) concluded similarly that organizations should consider mechanisms (culture and climate) to retain knowledge within their implementation strategies.

Authors explored in the literature are generally in agreement about the effects of downsizing on knowledge. They believe that a) downsizing suggests a reduction in the organizations overall knowledge, (b) downsizing damages the learning capacity of organizations due to knowledgeable workers leaving, (c) employee knowledge base should be considered in the selection process to avoid letting go high quality knowledgeable workers (d) recommends

managers to seek downsizing strategies with consideration of knowledge loss to avoid negative effects of intellectual capital. Although the authors recognize that downsizing has an effect on organizational knowledge, the literature did not address the ripple effects of individual or organizational talents and experience lost through downsizing, nor did it discuss any compensating strategies for these lost skills and talents. In addition, neither of the authors addressed strategies to compensate for the closing of the knowledge gap for new employees. What is missing is a comprehensive understanding of the relationship between downsizing and loss of knowledge.

### **Knowledge and Performance**

According to the knowledge-based theory of the firm (Grant, 1996) a key organizational task is accumulating and protecting valuable knowledge. This knowledge determines a firm's capacity to efficiently convert its inputs into valuable, hard to imitate outputs (Schmitt, et al., 2011). Thus, the firm's critical knowledge, skills, and capabilities contribute actively to its performance and success (Nonaka, 1994). Huber (1991) suggests that while most studies have shown that group and organizational learning produce positive outcomes on productivity, quality research on knowledge depreciation has shown that the effects of knowledge accumulation can decay overtime.

Numerous studies on experts have shown that they possess greater knowledge than novices (e.g. Ericson & Smith, 1991). This is also reinforced by everyday experience. Performance seems to accompany knowledge, and experts clearly know more about the fields in which they are active. However, closer inspection of such studies and everyday experiences reveals a frequent failure to distinguish between knowledge that is functionally relevant for the control and organization of actions and knowledge that merely accompanies actions or justifies

them in retrospect. As a result, we cannot assume that the knowledge that high performers (experts) report is the same as the knowledge responsible for their performance. According to Schack (2004), several expert-training studies have demonstrated this impressively:

Generally, such studies train participants over several weeks as an expert group and teach them, for example, certain problem-solving rules. A second group receives no training at all. Interviews then show that members of the expert group will report knowledge of the rules and also say that they apply it. However, observations during task performance often reveal that persons verbalize as being relevant for their actions and the knowledge that is responsible for their actual performance. (p. 39)

Several researchers, for example Nonaka and Takeuchi (1995) and Stahle, (1999), explain that the success of an organization is formed by the interaction between individuals and several types of knowledge (Schack, 2004). Knowledge has become more relevant to sustaining business performance than capital, labor or land (Drucker, 1992) and is considered as a very important factor for organizations to gain competitive advantage (Amit & Schoemaker, 1993; Kogut & Zander, 1993; Krogh & Roos, 1996).

### **Summary**

Researchers agree throughout the literature that there is a link between knowledge and performance. They also tend to agree that an organization's critical knowledge skills contribute to its performance. This literature review, however, did not examine how to create and transfer knowledge efficiently within an organizational context in order to ensure a high performing organization.

## **Learning**

In this section I discuss what the literature outlines regarding (a) approaches and methods to employee learning in organizations and (b) theoretical perspectives on workplace learning.

### **How Employees Learn in Organizations**

Human resource development professionals have recognized for many years that learning is entrenched in day-to-day work practice (Fenwick, 2006). Fenwick argues that along with human resource development (HRD) theories of informal and incidental learning, and along with action learning, understandings of work learning can be greatly improved by incorporating practice-based theories (Fenwick 2006). These practice-based theories emphasize that learning cannot be considered as an individual process. Fenwick argues that the practice-based theories focus on learning from the perspective that it occurs from relations and interactions of people with the social and material elements of particular contexts (Fenwick, 2006). In Fenwick's article she discusses three contemporary bodies of practice-based learning theory: (1) participative perspectives of situated cognition, (2) expansion perspectives of cultural-historical activity theory, and (3) actor-network theory. Although not new to HRD, Fenwick brings them together with published empirical workplace research utilizing their concepts to highlight selected dynamics that may be useful tools for HRD theory development.

### **Learning as Participation in Situated Practices**

Lave and Wenger (1991) argue in their theory of situated cognition that individuals learn by becoming engaged in a particular community including that community's history, assumptions, cultural values, rules, the technology and language, and the moment's activity. These theorists define knowing and learning as engaging in changing processes of human participation in a particular community of practice or CoP (Fenwick, 1991). A central element of

this is shared experiences, whereby a group of individuals who work together for a period developing particular ways of doing and talking about things that their members learn through action is movement (Fenwick, 1991).

According to Lave and Wenger (1991), knowledge moves; it is not stationary body of concepts. Billet (2004) shows that one another's knowledge and norms are actively influenced by other individuals through a process of co-participation. Thus, the community continually reproduces and even entrenches knowledge in which new participants become grounded. The individual affects the community knowledge by injecting new ideas, and the community affects the individual's behavior through teaching. The impact on the CoP on individual learning is greatest in socialization (task mastery, role clarification, and social integration) and in defining or demanding particular competencies, as well as in the reward system and values placed on learning (Driver, 2002). (Fenwick, 2006, p.291)

According to Fenwick (2010) some empirical research has sought to explain the adjustment of community practices to meet changing pressures (for example, downsizing, and layoffs) - and identify ways to facilitate these changes. Bogenrieder and Nooteboom (2002) found that community learning is affected by both relational stability, new ideas, and group structure (networks, competence). Other researchers have found that new learning is constrained by time pressure, deferral and centralization within and across projects (Keegan & Turner, 2001). When embedded in social structures, workers organize their own learning regardless of management boundaries and innovation expectations (Poell & Van der Krogt, 2003).

However, on the whole, this participative perspective does not grant sufficient attention to the individuals' interactions within the community: individual difference in

perspective, disposition, position, social and/or cultural capital, and forms of participation is unaccounted for. Therefore, despite the contributions of this theory to understanding knowledge embedded in activity, a fine-grained analysis of individuals' actual interactions within activity is still lacking. (Fenwick, 2010, p. 292)

### **Learning as Expansion of Objects and Ideas**

Cultural-historical activity theory shows the importance of sociocultural interactions of individual perspectives, system objects, and practice histories in generating knowledge (Fenwick 2010). In any activity system, one must understand that actual and possible action is shaped by its object, the problem at which activity is directed (Fenwick 2010). Engestrom (1999, 2001) suggests that learning occurs as a cycle of questioning something in this activity system, analyzing its causes, modeling a new explanation or solution, implementing this model in the system, reflecting on it, and consolidating it. The back and forth activity revolves around finding consensus about what exactly the problem is, and what can be tolerated as a solution or innovation within the politics of the system.

Wright (2002) found that it is almost impossible to separate individual skills and knowledge for what emerged collectively in a group. People and ideas were always moving in and out of each other's offices and this action tended to circulate around the development of a prototype, which served as the center of all interactions (Wright, 2002). Thus, participation in collective action to define a problem and achieve an objective – with tools, language and actions, individual and group - is interminably connected with skills transformation. Furthermore, this action alternates between creative, expansive activity and validating, critical activity, between what is present and what is not yet: between flying and grounding. (Fenwick, 2010, p.293)

## **Learning as Translation and Mobilization**

Gherardi and Nicolini (2000) studied how cement-laying workmen learn safety skills, using actor-network theory (ANT) as an analytic frame. The goal was to examine how knowledge is “translated” at every point as it moves through a system. They found that no skill or knowledge had a recognizable existence outside its use within the community (Gherardi & Nicolini, 2000). The actor-network theory they used explains that any changes we might describe as learning emerges through networks of actors. These actors are, for example, humans that have become gathered together as a network acting out some kind of work to maintain the network’s integrity.

Lave and Wenger (2004) assert that Edwards and Nicoll (2004) are among those applying ANT to understand workplace learning and pedagogies. Actors are entities (both human and nonhumans) that have become mobilized by a particular network into acting out some kind of work to maintain the network’s integrity. Each entity becomes an actor by translating another actor, mobilizing it to perform knowledge in a particular way, such as a worker translating a foreman into a disciplinarian through a particular set of behaviors. Each entity also belongs to other networks in which it is called to act differently, taking on different shapes and capacities. (Fenwick, 2004, p. 294)

## **Grounding and Flying**

According to Fenwick (2010), knowledge is always flying; it is on the move. However, at the same time the system’s activity and knowledge are grounded in its routines, tools, and power play. Depending on the demands of the tasks and contextual structure, each perspective suggests that learning moves in different directions (Fenwick, 2010). To help clarify the direction of the learning movements in work environments, Fenwick (2010) uses flying and grounding.



Flying is intended to capture dynamics associated with knowledge change; innovation or transformation regardless of its tempo or contour. Not only does the workplace construction of what counts as knowledge continually shift, but also the changing technology and tools conjuring particular skills create uncertainty and demand improvisation. (Fenwick, 2010, p. 296)

Fenwick (2002), in a study of 100 self-employed people who all faced very steep learning curves, found that the participants actually referred to learning on the fly or flying by the seat of your pants. That is, they felt that their learning was entirely rooted in fast-paced action, almost intuitive and beyond logic. The action felt fast because they felt pressured to make decisions, invent solutions or produce something on the spot, without learned routines and strategies (Fenwick, 2002).

On the other hand, when people talk about getting grounded they usually mean getting their cultural bearings: learning sufficient norms and expectations to participate fully in community, establishing their location both socially and geographically, and building sufficient competency to feel a comfortable sense of control (Fenwick, 2010). According to Fenwick (2002), studies of community of practices show how grounding can lead to entrenchment of certain practices and hierarchies in communities.

### ***Summary***

The three theoretical perspectives (learning as participation in situated practices, learning as translation and mobilization, and grounding and flying) provide useful analytic tools in work-learning processes for human resource development although they possess different objects of analysis (Fenwick, 2010). These different theoretical formulations should not require

reconciliation, for they are preoccupied with different objects of analysis and ideologies and shed light on different levels and forms of work learning (Fenwick 2010).

Situated theories that show learning as participation in communities of practice provide an anthropological view of an overall system. ANT provides a micro-level view of how knowledge is actually negotiated or translated at each interaction, and the politics influencing who or what can be seen and mobilized at any moment. Cultural-historical activity theory tries to link micro interactions in practice to a macro-level view of how learning transpires over time, examining the historical emergence of a system's knowledge and tools, its structures of labor division and roles, and its changing objectives. (Fenwick, 2010, pp. 295-296)

Each perspective suggests that learning moves in different directions depending on task demands and contextual structures. Flying and grounding were employed to help suggest the nature of these directions in work environments (Fenwick, 2010). What was missing from the literature was a comparison of the advantages and disadvantages of the different perspectives. The question left unanswered is as follows: Which one of the perspectives would be most and least beneficial in a learning environment that has experienced a massive loss of knowledge?

### **How Workers Gain Knowledge Lost**

According to Massingham (2008), Starke et al. (2003) suggest that each organization has tacitly embedded within it, the totality of the knowledge to produce its products or services. Replacement employees may then access the knowledge embedded in the organization's social or structural capital. Massingham (2008) noted that according to Dess and Shaw (2001), the predominant theoretical approach to examining organizational-level consequences of workforce reduction is human capital theory.

Human capital is the knowledge possessed by employees, and is aggregated at the organizational level in terms of their combined competence and experience. Its value is measured in terms of the activities it enables employees to perform and the tacit knowledge resources available to the organization to create new knowledge, solve problems or develop employee capability. When employees leave, all their specific functional expertise, experience and skills leave. This may produce two direct impacts: decreased organizational output (Osterman, 1987) and decreased organizational productivity. (Massingham, 2008, p.543)

Previous research has found that important elements of a social network are lost by employee exit (Dess & Shaw, 2001). Social capital is seen as an organizational resource, rather than an individual resource and creates value through relationships which offer the opportunity to create, share and combine knowledge resources (Granovetter, 1992; Kogut & Zander, 1996; Nahapiet & Ghoshal, 1998). Organizational memory is an important network element of social capital, “defined as the social’s network’s accumulated experiences gained through learning by doing within the unique construct of the organization itself” (Massingham, 2012, p. 543).

Cascio (1993) provides an example from a Fortune 100 company which downsized, where a bookkeeper earning \$9 an hour was let go. Unfortunately, the company later discovered that it had lost valuable memory because the bookkeeper knew how to answer important questions (where, why and how to) which apparently no one else did. The company then hired the bookkeeper back as a consultant at \$42 an hour! According to Shah 2000, the exit of members of a social network may have a direct impact; reduced organizational memory. (Massingham, 2008, pp. 543-544)

Employees turn to a source of knowledge when they do not know what to do or want to learn something new. Thus, structural capital represents a basic building block of knowledge used to increase the individual's and ultimately the organization's capability. The exit of employees contributing to the organization's structural capital may have a direct impact: reduced capacity as a learning organization.

Relational capital is knowledge gained through an organization's relationship with the people it does business with (Stewart, 1998). Research identifies the fact that lost relational capital may disrupt or terminate the knowledge flow between the interacting organizations (De Pablos, 2002). The exit of employees with valuable tacit relational capital may have a direct impact: decreased knowledge flows with the external organization.

### **Summary**

To summarize, when workers do not know what to do, there are sources available for them to gain knowledge that has been lost due to downsizing or attrition. Embedded in an organization is knowledge that it needs in order to remain productive. Employees will turn to structural capital and relational capital to access the knowledge embedded in the organization.

The existing literature is inadequate in reflecting the reality of the studied workplace. The studied workplace (specifically the targeted department) has predominantly new employees. The question then becomes how does one improve the expertise of individuals, teams, work processes and the overall department? To answer this question, Lave & Wenger (1991) suggest adopting the concept of community of practice in order to focus on people and on the social structures that enable them to learn with and from each other. They argue that communities of practice enable the practitioners to take collective responsibility for managing the knowledge

they need, recognizing that, given the proper structure, they are in the best position to do this (Lave & Wenger, 1991).

### **Chapter Summary**

The literature describing (a) knowledge and knowing with a focus on how they are conceptualized (b) knowledge in the context of workforce reductions and (c) knowledge and performance in the organization provided a rich basis for this study by supporting the view that downsizing reduces overall knowledge in an organization. Although it did not address the effects that knowledge deficits as a result of downsizing, have on new the employee's learning, performance, and safety in the organization, it does highlight knowledge in the context of individuals, groups, explicit, tacit, and community of practice senses. The literature discusses how the knowledge in these senses are associated with learning in the organization, how knowledge can be a feature of organizational memory, as well as how knowledge can and cannot be tapped for the benefit of the organization. Therefore, the literature on knowledge and knowing informs this study by shedding light on how employees individually and collectively construct new knowledge. Employees do this by sharing their tacit and explicit knowledge as well as their collaborative group knowledge in order to learn how to do their jobs.

In addition to this, the literature outlines organizational knowledge in the context of workforce reductions by highlighting findings to support the following ideas: (a) downsizing suggests a reduction in the organization overall knowledge and performance, (b) downsizing damages the learning capacity of organizations, and (c) there is a link between knowledge and performance in that critical skills contribute to the organization's performance. This supports this study's intention to explore the implications of knowledge deficits on the learning experience and performance of new employees and the impact on the organization.

Finally, some of the approaches and methods that employees use in order to learn their jobs in an organization are discussed in the literature. These approaches and methods are (a) learning as participation in situated practices, (b) learning as expansion of objects and ideas, (c) learning as translation and mobilization, and (d) grounding and flying. All of these were important in order to shed light on the different levels and forms of work learning. Scholars also provided insight on how workers gain knowledge that was lost during workforce reductions. They found that replacement employees have sources available to access the knowledge which is embedded in the organization's social, structural, or relational capital. These approaches and methods inform this study by analyzing the best and least effective learning tools used by new employees in an organization that is experiencing knowledge deficit. The literature on workers' sources for accessing knowledge informs this study by providing insight into the sources that may hinder or help workers gain the knowledge that was lost during workforce reductions.

## **CHAPTER III**

### **Methodology**

This research study used qualitative instrumental case study methodology to explore the learning experiences of new hires and the influence knowledge deficits have on their performance, in an organization that is experiencing a massive loss of knowledge due to downsizing, attrition, and turnover. The methodology was also used to explore the influence of knowledge deficits on safety in the organization.

### **Research Paradigm**

Because this study sought to understand and interpret human behavior rather than to generalize and predict causes and effects, I approached it from an interpretive paradigm. This paradigm views human behavior as consisting of human actions. “A distinctive feature of actions is that they are meaningful to those who perform them, and become intelligible to others only by reference to the meaning that the individual actor attaches to them” (Carr & Kemmis, 1983, p. 88). I was concerned with interpreting the meaning the ‘actors’ at the research site attributed to their own behavior, and so in using the paradigm, participants, (in their natural setting), reflected and engaged in - semi-structured interviews as part of a focus group process. Each participant responded with a personal interpretation of the learning experience, performance and impact on the organization.

### **Research Design**

The study used a qualitative design and case study methodology to answer the following research questions:

1. How does knowledge deficit influence the learning experiences of new hires?
2. How does knowledge deficit influence the performance of new hires?

### 3. How does knowledge deficit influence safety in the organization?

A qualitative research design is exploratory and attempts to understand and make sense of phenomena from the participants' perspective. It is also concerned with how participants construct their world. As such, qualitative methodology is appropriate alongside an interpretive paradigm for this study largely because (a) it allows for the construction of meaning by the new hires in terms of their perception/s of the implications of knowledge deficit on their learning experiences and their performance and (b) it allows for an exploration of the issue of knowledge deficit and its impact, since at the time of my writing, there were no formal or complete theories in relation to knowledge deficits and their influence on new employees.

This study is motivated by questions that have emerged out of my own experience with new hires and my professional practice. The motivation for me to understand the phenomena better arises not only from the desire to contribute something of use to the organization being studied, but also from the desire to enlighten my own practice.

Case study methodology provides a general understanding of a phenomenon using a particular case. Given that the phenomenon in the study involves understanding the impact knowledge deficit has on the learning experience and performance of new employees, as well as on the organization, I selected one fortune 500 refinery of 350 within the organization as the particular case unit for analysis. I used the case study technique because it permitted an investigation of the phenomenon in a real life context (Yin, 1984); “a focus on conditions after downsizing instead of the total organizational life cycle” (Van Dalen, 1979, p. 294); and flexibility in data collection and sources (interviews, documents, field observations) from which it was obtained (Van Dalen, 1979 as cited in Tellis, 1997; Yin, 1984). In addition, the case study



approach is appropriate because I did not only consider the voice and perspective of individual ‘actors’, but also the group of actors and interactions between and amongst them.

As researcher, I was the primary instrument of data collection and analysis in this study. I used an inductive investigating strategy with the use of formulated research questions that results in a richly descriptive end product. In this case study, I also analyzed data from interviews, documents and field observations to identify patterns that would shape the research findings and conclusions. I conducted semi-structured interviews in order to obtain descriptive data that included the norms, attitudes, beliefs, and practices of the participants. This provided an understanding of their views and actions. I also used documents to help establish the background of the organization (i.e. to select participants, to determine relationship between new employees and injuries, and to understand types of training provided).

A number of procedural stages were established while initiating this research design. At first, I anticipated that the first two questions would remain relevant to guide my study. However, a third question became important as I was gathering data. I then added a question to reveal findings associated with safety in the organization. Once the research questions were finalized, I moved to selecting research techniques and collecting data. This involved

- developing a document checklist;
- gathering documents and identifying themes;
- developing interview questions developed;
- piloting interview questions; and
- conducting interviews.

## **Research Techniques**

Data for this case study are provided from semi-structured interviews and document analysis. In this section, I discuss my rationale for the selection of these techniques in the context of the present study. Techniques, along with data collection instruments, are described in more detail under the section titled *data collection*.

### **Interviews**

Interviews were the essential method of data gathering in this study so that I could obtain rich in-depth experiential accounts from all research participants. I utilized the group interviewing and one-on-one interviewing techniques in an informal setting. Participants were facilitated in the medical conference room at the plant, away from their work area, and during normal business hours. This setting helped employees avoid any focus on their day to day tasks during the interview period. I informed the participants at the beginning of the group interview that the process was informal with the purpose of getting them to talk in-depth about the issue, and to provide me with relevant information from their own perspective. I asked open-ended questions in the hope of “getting the big picture” behind a participant’s experience.

Group interviews had several strong advantages based on the study’s context. They were inexpensive to conduct and produced a lot of rich data; the participants were able to expound on each other’s point of views and I was able to get the interviews done more quickly as opposed to meeting with the participants one on one. In addition, since the study was exploratory, group interviewing allowed me to bring several persons together to stimulate descriptions of specific event or experiences, opinions, and or attitudes shared by members of the group. The technique was flexible enough to allow me to focus on the issues that were of importance to the participants, rather than those that were important in my mind as a researcher. In this way, I

could probe issues, explore them as in depth as possible and receive immediate feedback from participants.

The group interviews were not without challenges or limitations. Two main challenges noted were that (a) in every group, there was much effort put into keeping at least one person away from dominating the conversation, and (b) at times the group deviated from the central question increasing the need for me to balance interviewer and facilitator roles.

## **Documents**

Documents and records used for this study were employee verification reports, training evaluation sheets, injury reports, classroom curricula, journal notes, and the organization's corporate values statements. These were used to provide insight into some of the organizational processes, generate questions and to help me make sense of the findings in context. In addition, the documents provided themes for exploration in the interviews and a picture of how the organization would like to see itself - as obtained through the words of upper-level management and as found in the organization's value statements. Understanding how management would like to see itself was important to determine (a) if their words matched their actions, (b) if policies and strategies addressed employee learning, performance and safety and (c) the key drivers of the organization. One of the main advantages of documents as a data source for this study is that they were always readily available to me.

## **Data Collection**

This section includes a description of the participants and data collection instruments used within the context of the study's research site (described in chapter one). Here, I also outline issues of trust, reliability, validity and ethical concerns. I conclude the section with a discussion of how data were analyzed as well as a general chapter summary.

## **Participants**

Semi-structured interviews were conducted with three focus groups and two one-on-one interviews from the third process department at the plant. This department experienced the greatest loss of knowledge due to downsizing, and as such, all new employees were assigned to it. In turn, these new employees were faced with adapting to a work environment that was experiencing knowledge deficit. To minimize researcher bias, I used the union president and the organization's employee verification report to identify the sampled population. Choosing the union president as the key informant in the selection of participants was based on the fact that a) he is viewed by the union workers as a person in position of power - and one who could protect them from any form of discipline and or retaliation and b) he was familiar with each of his union brothers. I asked him to identify individuals who were perceived to be open, direct and in possession of good work ethics.

As part of the sample selection process, I chose five classifications of workers, namely top floor operators, seed operators, tray operators, fifth unit operators and tank circulators. Participants were all hourly employees and held entry level production positions. All were male with ages ranging from 24 to 49. Of the ten, three were Black, four were White and three were Hispanic. Three Black participants and one Hispanic had transferred in from another location of the organization under study. Initially, three employees per classification were selected. However of the initial sample size of 15, I was only able to hold interviews with 10. The number of participants who engaged in interviews is listed as follows:

- Interview Group 1 – two participants (one went home after getting off of night shift).
- Interview Group 2 – three participants.

- Interview Group 3 – one participant (one called in sick; one was forced to work overtime on his shift, due to low seniority).
- Interview Group 4 — one participant (two had to cover vacancies for their crew).
- Interview Group 5 — three participants.

I opted to cut-off the sample at 10 after hearing basically the same information from several of the participants in the focus group and learning nothing new from group to group. I achieved data saturation as described by Glaser and Strauss (1967). These theorists believed that based on “...the diminishing marginal contribution of each additional case, the researcher will have no need to continue with further cases when the marginal utility of additional case approaches zero” (Glaser & Strauss, 1967, pp. 61-62).

## **Interviews**

In preparation for the group interviews, I contacted the Superintendent of the department being studied to remind him of the time and location of his employees’ interviews. I also double-checked my recorder to ensure that it was working and secured my spare recorder (in case of an emergency) as well as a notebook for notes. In conducting all interview groups, the goal was to remain open to new ideas throughout the study and let it develop with the help of the participants. I tried to assume a learning role rather than a testing one so that I could learn with the participants (by being interdependent and mutually interactive with them), rather than conduct research *on* them (Wolcott, 1990). Also, in order to encourage the participants to explore their thoughts and feelings on the subject, I assumed the role of an active listener, tried to be self-reflective, tried to avoid problem-solving, and posed questions in order to construct a collaborative account of how knowledge deficit impacted the learning of new hires.

The three interview groups and the two one-on-one interviews were conducted between April 3, 2013 and April 18, 2013. At the beginning of the interview sessions, the date, time, place, and name of the participants were recorded. I then began the interviews by explaining the project briefly and by going over the consent form (see Appendix C) with the participants. All of the participants were first asked to sign the consent forms. Participants were then allowed 10 minutes to review the interview questions before the interview began. The interviews consisted of standardized open-ended interview questions – a set of carefully worded and arranged questions; implemented essentially the same with each interview group focusing on the participants' on the job and classroom learning experiences.

I asked basic, descriptive, follow-up, simple clarification, comparison/contrast, and structural/fundamental questions. These questions consisted of experience and behavior, meaning, and opinion and value questions which provided me with answers to the research questions in order to construct meaning (Fraenkel & Wallen, 2009). During the interviews, I also made note of any non-verbal communication. Each interview session lasted between one to one and a half hours, and each was audio recorded. I transcribed each session's recording and checked the transcripts for accuracy, adding or deleting words in accordance with the recording, and inserting non-word communications such as chuckling, sighs, movement of head, movement of arms, and shaking of legs. Copies of the transcript are kept in a five drawer locked filing cabinet at home and are not included due to considerations of company and participant confidentiality.

In order to provide a context for understanding the participants' learning experience in an organization that is experiencing a massive loss of knowledge due to downsizing, attrition, and turnover, the interview guide approach was used. This approach ensures that the same areas of

information are collected for each participant. The interview guide approach also provides context for understanding the impact that knowledge deficit has on the performance of new employees. Based on the interviews conducted, I made follow-up visits to three of the participants – two top floor operators and one tank circulator. The purpose of this follow-up was to clarify any tentative finds, especially unanticipated information such as the disrespect and lack of inclusion of employees who transferred in from another location.

### **Documents**

As outlined earlier in the chapter, the documents used for analysis in this study were employee verification reports, training evaluation sheets, injury reports, classroom curricula, journal notes, and corporate values statements (see Appendix D). They were read and analyzed for relevant information—which is anything that indicates the impact of knowledge deficit on new employees. In sum, these documents provided background and context, additional questions to be asked, supplementary data, verification of findings from other data sources and were a means for tracking change and development (Bowen 2009).

### **Trustworthiness, Reliability and Validity**

I made several choices to increase trustworthiness and to minimize common threats to validity (Seidman, 2006). To address questions of authenticity, trustworthiness, and credibility, I first selected employees who were new to the workforce to minimize threats to validity arising from personal bias toward participants or individuals named by them. Second, because I am employed in a union facility, I gave the participants the option of having union representation present if desired. None of the participants exercised this option.

In addition to this, I conducted three 60-90 minute interview groups and two one-on-one interviews with a combined total of 10 participants. Multiple data collection strategies

(interviews, observations, and documents), as well as engaging in reflexivity were applied - to minimize the chances of findings being based on idiosyncratic data. I allowed the interview questions to continuously evolve, even though the semi-structured interview questions were piloted for ambiguity and clarity. Given this approach, I added questions when it became necessary to facilitate developing responses if the interviewees were reluctant or unsure. I then used the additional probing questions in hopes of getting richer information from the interviewees, and to obtain clearer responses to questions regarding the effects of knowledge deficit on the new employee. I also conducted follow-up interviews on an as needed basis when questions arose as I began to reflect and code data (see Appendix H).

In short, I made every effort to achieve and sustain trustworthiness and reliability throughout the study by (a) writing clear case study research questions, (b) applying purposeful sampling strategies appropriate for case study (c) collecting data and managing it systematically and (d) analyzing data correctly (Russell, Gregory, Ploeg, DiCenso & Guyatt, 2005).

### **Ethical Concerns**

There was minimal threat to the well-being of the employees in the study as a result of their participation. This was mainly because of the nature of the research questions, and the fact that in my role at the organization, I no longer recruit and facilitate new hires. As a result of this, I do not know the new employees personally or by reputation. My push to neutralize the risk that downsizing and its effects have on the organization's potential for learning and development of new employees should also minimize the threat of "interviewing as exploitation – a process that turns others into subjects so that their words can be appropriated for the benefit of the researcher" (Seidman, 1991, p. 7).



## **Data Analysis and Interpretation**

The steps planned for data analysis were (a) organize statements into categories, (b) map the categories to further classify the data into themes and categories, and (c) identify categories which could be subsumed into broader categories. Analysis began with the collection of text and images from group interviews, field observations, and documents. The audiotapes from each group interview were transcribed verbatim using a personal computer and Microsoft Office Word 2007. I read and re-read the transcripts and documents to attempt to gain a holistic sense of the entire database. I then wrote memos in the margins of transcripts and field notes that contained key concepts or phrases - and analyzed and collected the data concurrently throughout the study. This approach enabled me to follow-up with questions from the participants and to review additional documents when needed. It was also useful in my role as Human Resources Manager because I was able to make some immediate improvements without violating the confidentiality agreement made with the participants and the organization.

To analyze the interviews, I followed a number of steps. First, I organized the data by grouping all the answers to each question together by group interviews; For example, question one had all of the answers from each group grouped together. Second I read and re-read the data. Third, I divided the full set of data into three different documents for each research question. The first document was titled *1<sup>st</sup> Step – Match Answers to Research Question 1*, the second *2<sup>nd</sup> Step – Highlighted Non-related Answers/Comments* and the third, *3<sup>rd</sup> Step—Document with Deleted/Unrelated Comments and Answers*. Once this was complete, data from the 3<sup>rd</sup> Step document were perused and color-coded for categories and themes. I followed the same process for research question two and three.

Although all of the data were thoroughly considered, the volume of data was overwhelming and I soon realized that I could not use all of it. I used only that which answered my research questions. To aid in trustworthiness of the study, I often engaged in the process of critical reflection. This required constant vigilance on my part in several ways. Given my position as Human Resources Manager, I had to constantly refrain from influencing the data with personal hypotheses. I also had to constantly remind myself that I could not enforce my authority in order to address unacceptable behaviors based on the information I received. The most challenging aspect of the analysis was its very ambiguous nature as a process, since as Human Resources Manager I wanted it to be controlled and procedural. It was also difficult not to draw conclusions prematurely based on a past history of issues (in relation to downsizing) that I have had to resolve – but instead, to wholeheartedly listen to what the participants were telling me.

The interviews were re-read, sorted and coded according to the steps above. In order to decipher the meaning of the data and render it in a way consistent with the research question, I first answered the research questions based on the responses (from the participants) to the interview questions. The interview group responses were then grouped according to which research question was answered (see Appendix G). The transcripts were separated by answers to each of the two research questions and then placed into two separate three ring 1.5 inch binders. One of the binders was labeled *Research Question #1 Answers* and the other *Research Question #2 Answers*. Irrelevant, repetitive, vague and overlapping statements were deleted to reduce unrelated responses. All of the relevant data were reviewed repeatedly until I became very familiar with each transcript. Remaining statements were then placed into categories using a system of color-coding with fluorescent highlighters to classify data. Each color category

represented a different category. The categories were then mapped to further classify the data into themes & categories. Data from the mapping process was separated according to each question, making it easier to review.

While the first part of the sorting and analysis was in progress, I met with my advisor for review and critique. A number of constructive suggestions were made regarding how to conceptualize themes already identified. It became clear that a logical framework was needed for sorting and conceptualizing the data.

Once this was established, I reviewed key themes, checked my assumptions that I began with to ensure that they had held up with the advent of data, and reminded myself of my original purpose. Finally, after categorizing all the findings, I was able to identify categories which could be subsumed under a broader definition. These broader categories were discussed with my advisor and there was general agreement that they were key drivers of an organization. Since my advisor is an expert in organizational knowledge and learning, conferring with her on the categories being identified, provided an outside check on the trustworthiness of my analytic process.

After ensuring my overall familiarity with the data sources, I launched into more detailed work - coding and connecting elements within those sources to broader categories (key drivers of the organization). I struggled with making a decision regarding whether or not to move my analysis up a level to the key drivers or to the organization's values. As I reflected on what I considered to be the most important drivers of the organization, it became clear that the values were embedded in the drivers of the organization.

Based on this new information, I re-sorted the data using a new coding scheme (see Table 1). Sorting consisted of three broader categories: (a) people, (b) finances, and (c) knowledge. I

once again used a system of color-coding with fluorescent highlighters, and represented each category with a different color or mark. I mapped and subdivided the categories until I was able to identify conceptual themes. Again, I reviewed all the categories and re-read the data in order to find quotations that would support each conceptual theme. The three themes which emerged were then used for interpretation and analysis. They also provided a foundation for recommendations since each theme was explored for possible action.

The coded categories were (a) training (b) learning process (c) effectiveness of trainers, (d) learning experiences, (e) productivity, (f) lack of knowledge, and (g) poor performance. The emergent categories included (a) productivity negatively impacted, (b) knowledge building with co-workers (c) incidents due to lack of experience, (d) unsafe performance, and (e) need for more trained people. Other aspects of the participants' experiences which I wanted to examine emerged from this second coding process. These included

- mentioning issues related to not being wanted from other plants;
- production before safety; and
- supervisors not holding employees accountable.

The data analysis process described in this section was an effective way to absorb large quantities of data, while at the same time providing a means for managing it.

### **Chapter Summary**

This study was conducted within an interpretative research paradigm, utilizing qualitative research and in particular, instrumental case study methodology. This approach is appropriate because it is an exploratory study that seeks to understand and construct meaning concerning the new hires' perceptions of the influences of knowledge deficit on their learning experiences and

their performance. There are no complete theories and no studies found on the focus of this research.

The research design reflects a view of knowledge as both explicit and implicit and encompasses the shared, accumulated knowledge of individuals within an organization. Such knowledge is embedded in work processes and resultant products and services that evolve over time, all of which develop to incorporate lessons learned from the organization's past experience. The research design also portrays downsizing as an organization reducing force generally to cut current or operations costs in order to maintain competitive.

The research procedure includes the analysis based on three interview groups and two one-on-one interviews (a total of 10 participants) and documents. Validity and reliability are supported by (a) case study research questions that are clearly written, (b) purposeful sampling strategies appropriate for the case study (c) data that are collected and managed systematically; and (d) data that are analyzed correctly. Validity and reliability were also supported by my own reflection throughout the analysis, which is aimed at distinguishing between the reality of what happened in the organization and my own concept or perspective of what happened.

## **CHAPTER IV**

### **Data Analysis**

The purpose of this study was to explore the learning experiences of new employees and the influence that knowledge deficit had on their performance within an organization that was experiencing a massive loss of knowledge due to downsizing, attrition, and turnover. In addition, the purpose was to explore the influence knowledge deficit had on safety in the organization. Initially, the questions that guided my research were the first two of the three listed below. However, a third question became important as I was gathering data. I added this question to reveal the findings associated with safety in the organization.

1. How does knowledge deficit influence the learning experiences of new hires?
2. How does knowledge deficit influence the performance of new hires?
3. How does knowledge deficit influence safety in the organization?

The analysis of the data is reported in four sections, namely (a) organizational/departmental context; (b) influence of knowledge deficit on learning experiences; (c) influence of knowledge deficit on performance and (d) influence of knowledge deficit on safety in the organization. I used quotes from the data to illustrate themes derived from the data analysis. In addition, I reviewed the organization's values and strategic statements and found that people, profitability, and knowledge are three of the main factors and resources which provide the essential operational functions of the organization. Once I came up with my themes, the question then became what was their importance to the organization? In other words, what did they mean conceptually? Themes were conceptualized as three key drivers of the organization.

### **Organizational/Departmental Context**

The organization consists of five major departments in which safety is their number one priority. The department under study has experienced the greatest loss of knowledge due to an economic downturn that resulted in downsizing. This department was the most complex of the five and the bottleneck of the plant because of equipment failures, spills, and flow cuts. It had the most turnover and because of this, all new employees were assigned to it. New employees were faced with having to adapt to a work environment that was experiencing knowledge deficit.

Closing the knowledge gap of the employees became the number one goal of the leader who transferred to the research site one year and two months ago. He views his role as helping to establish strategic direction and to develop systems for the location. He made it clear to his leadership team that having all employees trained to a competent level was one of his top priorities and often stated that his personal values are aligned with the organization's official values. These values are continuous learning – knowledgeable employees, safety, profitability, respect, and an inclusive work environment. In particular, he noted throughout the study how much he valued an inclusive work environment that encourages learning (with a focus on knowledgeable employees) while safely achieving the company's goals:

I believe that with all of the challenges we are faced with, if we have an inclusive work environment at all levels and all employees are trained and contribute to their full potential – putting safety first, we can achieve our business goals. Our workforce has gone through a dramatic change over the past few years. Besides the entry-level people hired in 2011 and 2012, we have existing employees who have moved into new departments and new roles. Because of the knowledge we have lost, the goal of the training initiative is to help everyone succeed.

The leader gave the training superintendent the responsibility for developing a training program with a focus on safety that would close the knowledge gaps of each employee. The training superintendent provided me with high-level details in describing the steps taken to develop the training program:

Work started in 2011 when the training staff reviewed all the training records for the four main process areas. We needed to know who was trained and qualified based on current records. We also tracked down 10 to 15 years of old training records and materials going back to previous control operator classes. We combined all the information into a new skills matrix for operators in each department. The skills matrix lists the all key job tasks down the left side for each operator classification (top floor, seed operator, 5<sup>th</sup> unit operator, tray operator, and tank circulator) in the department. The operators' names are shown across the top. The blocks below represent proof of training. If the block is green, we have a Mine Safety and Health Administration (MSHA) task training record on file with the employee's and trainer's signature that employee is trained in the task. We must confirm that the person understands how to do the job safely and have a signed record to show to MSHA if requested.

In terms of the goals of the training plan within the program, the superintendent shared the following:

Each department along with the Training Department has developed a six month aggressive training plan to increase each employee's job knowledge and skills to ensure they can perform their jobs in a safe and effective manner. Each employee will have a specific training plan customized for them to build on their present job knowledge. This will ensure each employee is trained on the tasks needed to perform their jobs. The goal



is to move people from the knowledge based performance mode into the rules based performance mode and skills based performance mode. The end result is an individual learning plan that lays out what each employee should know and be able to do now and for the long term. The skills matrix tells the department where the employee stands. Then the trainer and department work on closing the gap. The departments are committed to completing and documenting training for all operator classifications by the end of the first quarter.

Regarding training delivery, the training superintendent also explained that “training... blends traditional classroom instruction, hands-on activities, one-on-one coaching for people new to the job, and learning tools that employees can use in the field.” After gaining a better understanding of the training plan put in place to address the knowledge deficit of the new employees, I met again with the leader to determine whether or not the training plan objectives met his expectations. His response follows:

The training model keeps this basic principle in mind: a trained employee is a safe employee. If an employee is safe and knows what he is doing it will have a positive effect on the bottom line and we will all benefit with financial rewards. That’s what the plan is designed to do.

The leader’s response did not exactly answer the question. The response he gave was his espoused theory (Argyris & Schon, 1974) — that is, he described how he would like the outcome of the training model to be. According to Argyris and Schon (1974), the espoused theory is often different from the theory-in-use as theory-in use relates to the actual occurrence. The leader was not by any means being deceitful when he described what he wanted from the outcome of the training; he genuinely wanted the outcome to be above and beyond good quality. The difference

in espoused theory and theory –in-use is evident based on the reports from the participants in the following section. The theory in use as described in the content of the next section is a mismatch when compared with the leader’s intention of the training plan and its outcome based on reports from the participants.

### **Influence of Knowledge Deficit on the Learning Experience**

One of the fundamental assumptions in the study is that the learning experiences of new employees were influenced by knowledge deficits in the organization. During my first of focus group interviews, the new employees had just completed their night shift and I was concerned about whether or not the participants would be too tired to be engaged in the interviewing process. They, as well as the other interviewees, were all alert and open to discussion.

Some of the new hires reported specific things they did to learn how to do their job when they were first hired. However, the majority reported “ineffective” approaches to training opportunities which resulted in negative influence on their learning experience. Some examples of this negative influence, including poor classroom training and poor oral communication skills of the trainer, are outlined in the table below.

**Table 1 – Employee’s Perceptions of Learning Experiences**

<b>Ineffective Approaches to Training Opportunities</b>	<b>Negative Influence on Learning Experience</b>
Classroom Training	<ul style="list-style-type: none"> <li>• Didn’t know what to expect once they were assigned to the field.</li> <li>• Just reading papers; therefore, didn’t get a whole lot out of it</li> </ul>

	<ul style="list-style-type: none"> <li>Felt it was a waste of time – didn't learn anything – could not recall any of the information</li> </ul>
Department trainers unable to teach/transfer knowledge	Trainers was not able to explain “why” a task was being done a certain way, which led to new hire not understanding the whole process
Main Trainer lacked effective oral communication skills	Main trainer was hard to understand and did not speak up – didn't learn anything from him.
<b>Inadequate Training</b>	<b>Influence on Safety in the Organization</b>
Working at risk	Getting hurt and possibility of hurting others

### **Classroom Training Not Effective**

Most of the participants from all five focus groups reported that they did not learn anything from the classroom training. They believed it was a waste of time because they could not recall any of the information once they were assigned to the field. The tank circulators from focus groups two and four illustrated this best, as seen below:

I think they need to get rid of the classroom training because when you go out in the field it is totally different. We should be doing hands on instead of sitting over there for all of that time....to be honest you forget a lot of that as soon as you come out of there.

(I-3)

I didn't really start to learn anything until I went out there and they attached me with somebody because all of the classrooms are kind of a big waste of time. In my opinion, I mean you don't... nothing sticks. You can sit there and you can read a book all day, but

until you actually go out and do it, you know, and start to feel that map in your head of where things are at. And it seems like a huge waste of time. (I-6)

Other employees' perceptions seemed to be very similar, as they concluded over and over that the classroom training seemed irrelevant, insufficient and too long. Evidence of this is captured in their expressions below:

We uh had six weeks of class first and then we went out in the field and so during that time we actually had no idea what we were getting into but we got explained the liquor and the pressure behind valve and how to deal with pumps. (I-1)

Basically you just sit down all day and not learn anything about the job. You are learning add ons and benefits about the company which is good but you know especially out in Precipitation you should focus on the job at hand and what you are going to be doing. (I-5)

Just the classroom time...to me it was a waste of time. I could have been out there learning this. Don't get me wrong we all have to get the safety stuff up front. That is necessary, but 4-6 weeks in the classroom was overboard. (Top Floor Operator, Focus Group Three)

I disliked the classroom training the most. I didn't learn anything in there other than the MSHA and the CPR training and stuff. I didn't really learn a whole lot. You know, just how to beat a valve. Anybody can use a hammer beat a valve if it's not attached to anything. (I-7)

Based on the employees' expressions, it was clear to me that there was no connection between the classroom content and field work content needed to be successful in completing tasks in the proper manner. Therefore, I concluded that the classroom training had a negative impact on the learning of new employees because they were unsuccessful in performing their tasks.

### **Department Trainers Unable to Teach or Transfer Knowledge**

Participants voiced their concern about the trainers' inability to explain "why" a task was being done a certain way – a concern which led to them not understanding the whole process.

One of the participant's expressed frustration, for example, in noting that

... as far as a trainer or whatever, this is just my personal opinion, he's not a trainer. I mean because he doesn't know everything or explain everything...when you're training somebody and you're telling them to open up a valve here and here and then you ask him a question about it and he says, don't worry about it you'll confuse yourself... I mean these things need to be explained to a person so they know when somebody calls on a radio. You might know how to do it, but you never knew what you were doing or why you were doing it because it was never explained to you. That kind of stuff, the training...as the training is concerned, it needed to be explained. Why we're doing that, you know, what it is and why we're doing it.

In general, it was believed that the content was not delivered efficiently in order to create an effective learning environment. As described above, the trainers did not have the expertise at incorporating various teaching skills to deliver the content and this led to a negative influence on the learning experience of the new employees.

## **Trainer Lacks Effective Oral Communication Skills**

During one of the department training meetings I attended, the department supervisor made special requests for a particular retiree to come back as a trainer on contract because he was very knowledgeable of the process. Supervision discussed in great depth how valuable the retiree would be to the training of the new employees simply because he was deemed to be a departmental expert. However, according to the participants, they were unable to learn from him because he did not speak loudly enough, given the background noise in the department. They noted that he sounded as if he was mumbling, and his message was not always clear.

The participants reported that a trainer had poor oral communication skills. As a result, they could not understand how to successfully complete assigned tasks. One top floor operator in the department explained that “this particular person doesn’t speak up real well, you can’t really understand him. So I just kind of went through stuff and asked other people questions and kind of taught myself what was going on.” Another cited that “as far as our group that was on crew, I would ask him a question about what we were doing because... like I never could understand what the trainer was saying. When asked if they described the trainer as having poor oral communication skills because they couldn’t hear him or really couldn’t understand him, the fifth unit operator noted that “[he] really didn’t understand what he was saying he speaks real low and mumbles.”

Since none of the participants found this particular trainer to be effective, I followed up with the training superintendent to get a better understanding of what was contributing to the reported problem – that is, the problem of the “expert” being perceived as ineffective. In responding to questions of whether the trainer was trained himself or if he received feedback, the superintendent responded with a yes, adding that,

All of the trainers went through the training course provided by Victoria College. The instructor came to the plant to do the training...each trainer received one on one feedback after their presentation. Then the trainer from Victoria College and I went into the field and observed them in action. After the observation we pointed out what needed improvement. We told Joe that he was not speaking clearly and that it was very hard to hear him. At that point we added the radios to the training so that he could be heard.

The training superintendent also shared that employees are given feedback forms to complete, that these were reviewed by himself and the Victoria College trainer, and that there were no concerns mentioned.

In addition to following up with the training superintendent, I reviewed the departmental evaluation sheets and noticed that no one took the time to write additional comments. However, I noticed that the average rating on a five point scale with one being the lowest was 2.5. It is my belief that the department supervision, trainer and training coordinator did not view the training as ineffective because no one verbally complained. Also, even though the scores were only average, there was no follow up by the department supervision with the trainer and the employees to discuss what needed improvement.

### **Learning on the Job/Field Training**

The interview group participants generally indicated that the most effective training was a) hands on, b) field training, and c) “learning the tricks from the guys in the field that have been here longer” - even though as they noted that there were not many of them left. During on the job training, they solved problems, shared their experiences, learned from each other, and taught the

new crew members. Below are several responses to the question of what they did to learn their jobs:

...You know you get with that person that runs the job day in and day out, that operator, he's going to walk you through and he'll just stand there with you. They explain it to you more. In my personal opinion, if you do that... I'm more of a hands on person, instead of a book person. (I-8)

We teach each other. Take a little bit from everybody and you figure out how to do the job. That's what we are missing... we are missing a lot of experience. (Top Floor Operator)

Because of the ineffective approaches to training opportunities provided for them by the organization, most participants from the five interview groups reported that they learned from friends who were really ready to help, guys that have been around the longest, actually getting in the field – hands on, and from those operators that were actually doing the job day in and day out. They felt this was the most effective training. In addition, the participants reported interactions with each other in the department as a positive learning experience. They found value in sharing their experiences, getting together to solve problems, learning from each other, and being engaged in knowledge building even though they suggested the learning would have been better if who they were learning from or with had more experience.

### **Influence of Knowledge Deficit on Performance**

Another fundamental assumption in this study is that the lack of knowledge contributed to the new employees' insufficient skill set and poor performance. It appeared that downsizing, attrition, and turnover in the organization created knowledge deficit which influenced the



performance of new hires. I consolidated the salient points made by members of the various focus groups in order to develop a list of outcomes arising from lack of knowledge (Table 2). These “lack of knowledge outcomes” resulted from the influence of knowledge deficit on the performance of new hires.

**Table 2 – Lack of Knowledge Outcomes**

<b>Lack of Knowledge Outcomes</b>	<b>Influence on Performance/Productivity</b>
Insufficient Skills	<ul style="list-style-type: none"> <li>• Couldn't successfully out a process because of a lack of knowledge</li> <li>• Experienced critical incidents – “If I had been trained right, maybe I would not have missed that valve. I opened the screen box and the valve opened and released a flood of liquor. Am I being trained right?” (Top Floor Operator)</li> <li>• Low production</li> </ul>
Waste of time and resources	<ul style="list-style-type: none"> <li>• Didn't know how to properly circulate trays and it took a long time to fix it</li> <li>• Took a long time to complete tasks.</li> <li>• Mistakes/incidents occur often which requires rework.</li> </ul>

Not contributing to achieving business goals	<ul style="list-style-type: none"> <li>• Get better results when trained and know what to do.</li> <li>• Things get backed up and the workload gets backed up when we don't know how to perform tasks.</li> <li>• This creates production issues and "I don't feel good about it...right now worrying about every little mistake is kind of hovering over me every day which is a pain because I want to complete my job I know I have to."</li> </ul> <p>(5<sup>th</sup> Unit Operator)</p>
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I asked the groups to think of a time when they could not successfully carry out a process because they lacked the required training. The majority provided me with specific incidents in which productivity was negatively impacted. Participants reported that lack of training led to poor performance and ultimately bad productivity.

### **Poor Performance - Influence on Productivity due to Insufficient Skills**

One employee, noted that he was not trained and because of this, he used the wrong hose on a drain. He described the situation, explaining that,

...it turned out to be an incident. There was a 3x2 valve that would not close and there was an injection valve that wouldn't close all the way. The drain I was supposed to be using had a caustic hose on it so I couldn't drain the pump the way it was supposed to be

drained and I didn't know it. We were using caustic hoses to put back into the tank and so when it came out in the investigation...not supposed to have a caustic hose on a drain without a bleeder valve but they didn't train us that way.

In addition, because this employee did not have the skills to identify the corrective actions to take, it caused an incident. This incident influenced productivity by having to interrupt the work flow, which caused downtime so that the organization could investigate what went wrong.

Another participant did not have the skills to pack the pump; therefore, he was unable to complete his task within the standard time it takes to pack a pump.

I had to pack a pump and I have never done that. I went around and around because I couldn't do it. I was not about to finish that job so what I really did was I stayed over to finish that job. I didn't know it was time to go home...I was so very exhausted. (I-5 Operator)

### **Poor Performance - Critical Incidents due to Insufficient Skills**

In addition to examining ways in which insufficient skills negatively affected productivity, I asked the participants about any critical incidents they experienced as a result of not knowing enough to perform their required job tasks. The examples shared were of great concern (from my perspective as manager) since most of the experiences could have resulted in injury. Several examples of critical incidents confirmed my hypothesis that the participants' performance was influenced by knowledge deficit in the organization. One top floor operator reported that he "forgot to lock off a tank when opening and closing it ... [so that] once [he] put it back on it ended up spilling over." He concluded "If I had actually been trained right, maybe I wouldn't have missed that valve." Two fifth unit operators seemed to agree with his perspective.

In describing the risk associated with not knowing how to do a task, one of them shared that explaining that,

...there was one time there was blockage of hydrate on the lines to a pump...I didn't know how to use the heater valves to clear it up. The tank can overflow...and of course the tank is hot. I don't know how to do it...I've never done that kind of job.

The other described how safety hazards could occur as a result of lack of knowledge:

I almost got somebody hurt. We were doing a job and I was just lining. I hadn't really learned the job yet. It kind of made me think, I thought we were all on the same page, but I guess we weren't. I opened the screen box and the valve I opened released a flood of liquor, luckily nobody got hurt.

It appeared that insufficient skills and knowledge had a major influence on employee performance, as they were missing important parts of their tasks. As reported, one believed he was not trained properly and two others had not learned the job yet. Given this, it was not surprising that incidents occurred. Employees clearly did not have the proper skills to perform their tasks successfully.

### **Waste of Time and Resources**

I also asked the participants to tell me about a time when they noticed that because of the lack of skill/knowledge, productivity was negatively influenced. Each interview group began the discussion based on the frequency of incidents rather than the incident itself. Incident frequency indicated or at least implied that a lack of training resulted in wasted time and resources.

Participants often responded to this question quickly, and with short, direct statements as outlined in the examples below:

“...A lot” (I-9)

“Just yesterday...” (I-10)

“Every day over there”. (I-4))

“I see that every day out there”. (I-1)

“Almost every day for the last four months”. (I-7)

Regarding incidents, the top floor operator, seed operator, 5<sup>th</sup> unit operator and tank circulator reported incidents of how long it took to complete assignments, tanks that ran over, and inexperienced operators – linking lack of knowledge to waste of time and resources. In their work (respectively), “...it took so long to do that pump swap”, “[they] were [t]here 12 hours...14 hours yesterday...it should have been a 5 hour job” and “there are a lot of guys that hadn’t been there that long and that’s the problem, a lot of people just don’t know. As the tank circulator stated in frustration,

...you already know that somebody out there made a mistake. Something messed up and now your digester is down. It is just a day to day...it made me almost want to run my truck Into the ditch on my way to work instead of coming here because I know what I was going to go through when I came to work.

These kinds of examples were common throughout the interview group discussions and further suggested that the lack of knowledge contributed to insufficient skill set and poor performance of the new employees. The examples also had heavy implications for wasted time and resources at the organization.

### **Not Contributing to Achieving Business Goals**

The participants pointed out that they did not feel they had the skill set to contribute to achieving the business goals. They reported that results are better when they are trained on a job and know what to do. In addition, a tray operator reported that he didn’t feel good when the

workload got “backed up” as a result of not knowing how to perform tasks. He reported that he wanted to complete his job to help meet the department’s goals. I asked the participants to reflect on how more experienced trainers who are knowledgeable about the process can help them and the organization achieve goals. One participant working in the position of tray operator reported:

I don’t meet goals when I don’t know how to do my job. If you have a better trained person, they are going to know how to do their job better. You can get better results. I am not meeting goals.

In general, the participants believed that lack of knowledge resulted in incidents, insufficient skills and poor performance. They reported that in order to improve the performance of new hires, the organization needed to increase field training and eliminate classroom training, have more knowledgeable supervisors and trainers, reduce the workload, and help each other out more. They also reported that with more experienced trainers, the new hires and the organization would meet their goals because “if you have a better trained person, they are going to know how to do their job better. You can get better results.” (I-6) and “you can get your flows up...get more tanks up and going.” (I-10). The goals would be met because the new hires would be able to complete their tasks faster and in a safer way, there would be fewer injuries, flows would be increased and more tanks would be in service. One seed operator put it simply in highlighting the benefit of increased knowledge or know-how to the organization. As he stated, you are getting it done faster which helps the company out that way.”

As a result of the length of time it took to complete tasks, tanks ran over often, and the production tons per day were low. Given this, the participants suggested that productivity was negatively impacted due to their lack of knowledge. I categorized and consolidated the knowledge deficit and the influence the deficit had on their performance reported by the new

hires into a single listing, *Insufficient Skills*, *Waste of Time and Resources*, and *Not Contributing to Achieving Business Goals* (Table 2).

In short, I confirmed that knowledge deficit seemed to influence the performance of new employees based on what they reported – couldn't successfully carry out assignments because of a lack of knowledge, experienced critical incidents, took too long to complete tasks, and they did not feel as if they contributed to achieving business goals.

### **Influence of Knowledge Deficit on Safety**

The influence of knowledge deficit on safety became apparent to me as the research study progressed. Examples of its influence on safety are quoted in the following section on *working at risk and getting hurt due to inadequate training*. It became important for me to find out more about how knowledge deficit influenced safety because one of the values of the organization is safety. The value statement concerning safety is “We work safely, promote wellness, and protect the environment.” The leader also voiced how important safety is in his communication about the development of the training program. Because of this, I began to review the safety policy and the safety training program to gain an understanding of why the employees perceived the safety training to be inadequate to the point of causing them to work at risk and getting hurt.

In my review of the safety policy, I found out that corporate's goal is to operate worldwide in a safe, responsible manner that respects the health of its employees. Also, it is stated in the policy that “safety values would not be comprised for profit or production.” All of the employees are expected to understand, promote and assist in the implementation of the policy and its accompanying principles. The principles include environmental, health, and safety. For the purpose of this study I only focused on the safety principles. According to the organization's Environmental, Health and Safety (EHS) policy, safety principles read as follows:

- We value human life above all else and manage risks accordingly.
- We relentlessly pursue and continually improve safety systems and processes to achieve a safety incident-free workplace.
- We do not compromise our safety value for profit or production.
- We comply with all laws and set higher standards for ourselves and our suppliers where unacceptable risks are identified.
- We supply and use safe and reliable products and services.
- We use our knowledge to enhance the safety and well-being of our communities.
- We are all accountable for conforming with and deploying our Safety values and principles.

The organization provides four weeks of safety training to all new employees. In addition, every employee receives mandatory eight hour refresher mine safety health awareness (MSHA) training. Putting safety first is preached on a daily basis by management. The organization has excellent safety guidelines and programs. Yet, the safety training provided to new employees is perceived as inadequate by the participants and this resulted in employees working at risk.

### **Working at Risk and Getting Hurt due to Inadequate Training**

The leader held learning in a risk free environment and using safe work practices as strong values. In his communication to employees he commented that “[in]...putting safety first, we can achieve our business goals. A trained employee is a safe employee.”

Examples of working at risk and/or getting hurt due to inadequate training were cited by the participants and contrasted with the values of top leadership of the organization. When asked



what he did to learn his job when he was first hired, one participant first turned his head from side to side, raised his brows, took a deep sigh and a quick glance at the others and then stated,

...when there is a critical job you are supposed to be doing they just push you out there and then say man why you don't know what you're doing. You can hurt yourself. So they should take the people out there and show them what's right and what they have to do the first few weeks they are out there.

Using the statement "you can hurt yourself" illustrates the employee's belief that management already knew it was unsafe to work. This perception directly contradicted one of the safety principles which states that the organization "value[s] human life above all else and manage[s] risks accordingly." It was certainly not the leader's expectation or value.

In highlighting that working at risk is common, an operator in the focus group nervously shook his leg, popped his knuckles, and with a quiver in his voice, described a time when he was given a task to do before he felt comfortable with knowing how to do it:

When they said here you go, you're on your own I was like man I hope nothing blows up or I'm really screwed. I didn't feel that I was at that point yet. I mean because they were moving people around and I was supposed to be with someone for two to three months and I was with someone for about two weeks.

In this case there is clearly an awareness of unsafe work practices, particularly with the statement "I hope nothing blows up or I'm really screwed." Elsewhere, another operator acknowledged that at one time or another he had a similar learning experience and was concerned about their safety:

For instance, there's certain things we didn't train on. We had 3 weeks to learn and then they told us we were signing off. We're cutting you all loose, you all are signing off. If you don't know it now, you should have known it; you'll have to learn it on the fly.

That's what we were told and I was worried. There's a lot back there to know, I mean, especially in the 5<sup>th</sup> unit, it has everything.

Based on the organization's safety principle, that is, "[they] relentlessly pursue and continually improve safety systems and processes to achieve a safety incident-free workplace", these examples of management's inconsistency when their words are compared with their actions are far removed from the safety intentions of management. The study's findings thus show that statements made by the leaders, safety guidelines, the intent of safety training, and corporate value statements were all contradicted in action. The question becomes, how did this happen? Management's intent was to have a training plan to reduce knowledge deficit with safety being the top priority.

### **Key Drivers of the Organization**

It was evident in the organization's values and strategic statements that people, profitability, and knowledge were three of the main factors and resources important to the organization's success. In understanding the importance of these drivers that provide the essential operational functions of the organization, I conceptualized the themes to match the drivers of the organization.

#### **People**

The organization studied based its success on people and top management voiced the fact that **people drove the organization's success**. The organization's top management also communicated that it provided an inclusive work environment that emphasized, respect, health and safety, and encouraged continuous learning with a focus on developing highly skilled employees. Some of the participants (mainly those who transferred in from another one of the company's locations) reported specific experiences that suggested a contrast with what top

management voiced. Their experiences instead indicated that the work environment neither emphasized, respect, health and safety, nor did it encourage continuous learning in an inclusive environment. Again, based on management's safety edict and the organization's safety guidelines it was certainly not the intent to provide an unsafe work environment. I discuss findings related to their experiences below.

### **Nobody Really Wanted Us Here**

It was both surprising and concerning to me in my role as a manager in the organization, to find out how much ostracism was taking place in the department towards employees who were transferred in from other locations that had previously downsized. Some of the participants became emotional when describing how they felt about not feeling wanted. One participant's voice quivered, eyes welled with tears, and eyes shifted away - avoiding eye contact with me. Without breaching confidentiality of the participants, I, in my role as manager, held a discussion with the department superintendent to gain insight into the problem. The superintendent reported that the transferees had come from a totally different culture and that their work ethics were viewed by some as being poor.

The transferees came from a smelter plant into a refinery plant. The primary difference between these two workplaces is that the amount of work that is done on a daily basis in a refinery is significantly more than what is done in a smelter. The locals at the refinery thus viewed the transferees as not carrying their share of the work and not caring about the overall progress of the operation. They believed that transferees would not be loyal to the organization since their home location had shut down due to downsizing. Since the majority of the locals do not want the transferees in the department, they feel as though they are wasting their time in training them. Transferees reported that they were given jobs that were mindless or dirty. They

felt disrespected, and had great difficulty getting trained on day to day operating tasks. This situation caused them to rely on each other in order to learn their tasks. Some of the examples that support the perception that they were not wanted are as follows:

### **Non-Inclusive Work Environment**

It is like nobody really wanted us here. (I-1 )

I hate to keep saying this but when [the transferees] people started coming we began to train each other because the [the local department] people didn't want to train us for some reason. (I-5)

### **Lack of Respect**

Like Fred said, when we first got here it felt like they didn't want us here so a lot of guys didn't want to take the time to train us. We actually had to get into an argument about that because we felt like we were not getting trained. It was almost 6 months we actually started getting trained. Like I say we were washing up a lot of days. We had to go across the road and tell them are we going to get trained or what or are we out here just to clean up. (I-2)

Some people feel like it's not their job to train they say things like I don't get paid for this – I don't get any extra money so why should I teach you anything. (I-6)

People are mean; they don't want to teach you nothing. When you go there (in the field) they tell you to take a hose and wash the floor. For almost about 2 months that is what we were doing because nobody wanted to train us. (I-8)

The organization's leadership stated that it emphasized safety and that people drove its success. In addition to the reports of working in a non-inclusive work environment and being disrespected, the participants did not feel as though people drove the success of the organization or as though safety was emphasized. Several of them reported times in which they could not successfully carry out an assignment because of their lack of knowledge. As one operator said,

...it turned out to be an incident -we were using caustic hoses to put back into the tank and so when it comes out in the investigation, not supposed to have a caustic hose on a drain without a bleeder valve.

There were other employees who shared about critical incidents that they experienced because they did not have enough knowledge to do the tasks that they were assigned to do. A top floor operator was concerned about the safety (working at risk) of the organization. He described an incident he encountered that almost got someone hurt:

I hadn't really learned the job yet... even though I did exactly what they asked me to do.

I mean I could have got somebody hurt that day. Maybe he didn't have enough training to train me too. He's only been out here a year and a half.

The majority of the participants' reports did not align with leadership's view that the people drove its success, neither did they align with leadership's statement that the organization provided a work environment that emphasized health and safety. In addition, the participants suggested that because they were not properly trained, and that the organization did not encourage continuous learning and/or focus on developing highly skilled employees.

### **Profitability**

Another one of the organization's key drivers and values was profitability. The organization's statement of profitability is "we earn sustainable financial results that enable

profitable growth and superior shareholder value.” The ineffective approaches to training found in the study suggested that there could have been an effect on the profitability of the organization. The six-week classroom training consisted of a total of eleven trainers (whose total annual salary was approximately \$865,000); however, none of the participants found the training to be effective.

### **Classroom Training/Department Trainer Waste of Time and Money**

The classroom training wastes everybody’s time. They get out in the field and decide they don’t like it here and then leave. The field work should have been in the beginning. You figure the time it takes for our training during the beginning – six weeks figure that and then the time it takes to train them every day and by the time it is all said and done it is a lot of time. (Seed Operator)

### **Quality of Training/Learning Opportunities Provided by the Company**

I reviewed the classroom training evaluation reports and it was confirmed that the participants found the training to be ineffective since they rated it as “poor”.

It is my opinion that the training was poor because it lacked a measurement plan to determine the success and Return on Investment (ROI) of training. Boudreau and Ramstead (2007) focus on three important groups of measure: efficiency, effectiveness and outcomes. According to Barnett & Mattox (2007):

Efficiency measures address whether the investment was high or low, enough learners attended training, and whether training is actively pursued.

Effectiveness measures assess the quality of training, whether it affects job performance, and whether that performance realized is a valuable outcome compared with the in the investment. Finally, outcome measures focus on the productivity of trainees, resulting

revenue produced (or not produced), and whether cost reductions can be achieved through training. The intersection of all three is a theoretical point of optimization in which the corporation's investment in training is at just the right level to achieve the optimum amount of output from employees. (p.37)

Barnett and Mattox (2007) honed in on five critical components – strategy, measurement models, resources, measures and cultural readiness in which they suggest shaping a measurement plan to determine the success and ROI of training. They believe that success is achieved at two levels, so that “first, when the five critical steps are accomplished to build a robust and sustainable measurement process, and second, when actual metrics begin returning valuable information about the success (or lack of success) of a program” (Barnett & Mattox, 2007, p.42).

Based on the reports from participants regarding how they learned their job, their experience of what was provided/not provided to them in order to learn and their perception of the impact of not knowing their job, belief concluded that the quality of the training was poor and a waste of time and money. Most of the participants believed the learning opportunities provided by the company (especially in the classroom) wasted both theirs and the company's time and money simply because according to them, that is not how they learned their job.

### **How They Say They Learned their Job**

When I asked participants how they learned their jobs, three of them shrugged their shoulders, moved their hands out in exasperation and shared that it was “through friends who are really ready to help you out” and “asking questions

especially from the guys that been around longer.” As one explained in detail, learning occurred by

...actually getting out in the field and doing it. Working with somebody, you know, that’s been here for a while and knows what’s going on and you know, teaches you. Because it takes a little while because it’s a lot of stuff and when you first walk out there you see the crap everywhere and it’s like what did I get myself into, but once your ether for a little while you start to... it’s just working with somebody that knows what going on and likes to train.

Another participant stated that he began to learn once he started to feel that “map in his head of where things are at.” What was most frustrating to this participant and some of the others, is that it was never explained to them why they had to do things a certain way.

### **Their Experience of What the Organization Did/Did Not Provide**

It was clear that learning opportunities provided by the organization were poor and a waste of time and money. Several of the participants reported that because of the ineffective approaches to learning provided by the organization, they wasted a lot of time on tasks that should have been completed in a much shorter time frame. For example, one participant reported the excessive amount of time it took to complete a task because they weren’t trained properly to do the job. He noted “I mean that...we were here 12 hours... 14 hours yesterday... it should have been a 5 hour job. Well that’s what they said anyway. When I left they were still working on it.”

The reports of ineffective classroom training, department trainers’ inability to teach/transfer knowledge and the main trainer’s poor oral communication skills all suggested a direct negative influence on the financial results of the organization. To be more specific, since



the approaches to training provided by the organization were clearly not working, this had an effect on the ROI for training. It was evident that there was loss from not knowing the job, working at risk and working unsafely. Therefore, profitability was negatively impacted. Also, the participants' perception that more experienced trainers who were knowledgeable about the process could help them and help the organization achieve goals, supports the belief that profitability was negatively impacted. As one tray operator stated:

You can see the difference as far as when they (experienced employees) are running it and when somebody with more experience is running it you can see the difference. You start getting an idiot up there not knowing what he is doing he starts backing up everything and everybody else starts backing up. Notice the workload change very quickly you know. I guess to say when we don't know how to run it; we are hurting the company's pocket by having all of these spills and backing up.

Most participants echoed a sentiment made by one tank circulator about the link between experienced trainers and company success in general. He noted that "if you have a better trained person, they're going to know how to do their job better and you the company will get better results...flows up and more tanks in service." Based on the experiences shared by participants, it appeared that the organization faced an opportunity to improve its financial results with better trained employees.

### **Knowledge**

In order to become the best company in the world, the leadership of the organization voiced that it needed highly skilled employees who are passionate about achieving business goals by way of its strategic statement. Therefore, knowledge was identified as a key driver of the organization. Top management communicated that whatever business challenge the

organization faced, chances are that a people challenge lay at the heart of it. In addition, they communicated that whether the organization needed to increase its revenue, prepare for a merger or acquisition, relocate a business, drive change or transform the strategy that drives a business unit, the answer lay in the knowledge and skill of its people.

The participants expressed views that there were a lot of experienced people who were knowledgeable of the process that were missing – meaning that they no longer worked there. They also made mention of how difficult it was to find someone who was knowledgeable of the process since the current majority had less than three years of service like the participants did. Some of the participants expressed they didn't have the proper skills to do their job because of the lack of knowledge. In addition, some expressed the concern that supervisors did not know enough to train the employees on how to properly perform their tasks. For example, when asked how they engaged in knowledge building, one employee outlined that

We teach each other. Take a little bit from everybody and you figure out how to do the job. That's what we are missing... we are missing a lot of experience. We need people in the area with a lot of knowledge. I hated to see [Tom, Dick and Harry] go...all of those guys left.

Another cited an experience he had regarding lack of knowledge – specifically an incident: where nobody knew anything about the process:

I know they had a problem with a lake water pump the other day. I heard the process control technician talking about it - that nobody knew where it was at. It was way back there when it was raining. Nobody knew where it was at or how to get to it. I know they had that problem.

In answer to the question of how they learned how to do their jobs, participants referred to a general lack of knowledge again and again. While the tank circulator noted that “they never really trained us”, the tray operator explained that “they didn’t have a training program when we first came here.” In addition, a seed operator concluded that “there are no knowledgeable trainers. These guys are struggling.”

In general, the participants described the department as having few employees who were knowledgeable. This suggested that the department did not have highly skilled employees, especially given that so many participants felt they were not properly trained and did not have the proper skills to perform their assigned tasks. Lacking employees who were knowledgeable was a common theme reported during the study. Participants felt that in order for them to improve their performance and achieve business goals, the organization had to have more trained people, knowledgeable supervisors and experienced trainers. As they emphasized, “we need more people trained right to know how to do their job. We need supervisors willing to come out there and help you, walk you through it if you need be.” Others stated that what was needed for them to perform their jobs better was “supervisors with knowledge”, “more trainers – more experienced trainers” and “a good trainer – [since] by having a good trainer, something has got to change.”

Based on the participants’ beliefs that their skill levels were not allowing them to achieve business goals, it became clear that the skill level of the participants were not aligned with the knowledge statement found in the policy of the organization (i.e., “we need highly skilled employees...[in order to] achieve business goals). This non alignment is a result of not having properly trained employees, knowledgeable supervisors, experienced trainers, and effective trainers.

## **Chapter Summary**

In this research study, I analyzed knowledge deficit and its influence on the learning experiences and performance of new employees within the context of a downsized organization. The analysis was organized into three categories, namely 1) influence of knowledge deficit on the learning experiences, 2) influence of knowledge deficit on performance, and 3) influence on safety in the organization. The themes were conceptualized to match three key drivers of the organization -people, profitability, and knowledge.

The economic downturn over the last few years caused the organization to be faced with increasing competition on a global level. In response, the organization resolved to become a competitive one and undertook the task of downsizing. Leadership at the organization's location under study set forth such goals such as valuing continuous learning with a focus on knowledgeable employees, safety, profitability, respect and an inclusive work environment while safely achieving the company's goals.

Participants' interviews were analyzed in order to learn if their learning experiences and performance were influenced by the loss of knowledge within the organization. This was done specifically in the precipitation department. Findings indicated that participants' learning experiences and performance were influenced in several ways. Participants included ineffective classroom training, department trainers' inability to teach/transfer knowledge, main trainer lacking effective oral communication skills as part of their learning experiences. These experiences led to insufficient skills, thus causing low productivity, critical incidents, waste of time and resources, not contributing to achieving business goals, and most significantly - working at risk and getting hurt due to inadequate training. In review of the top management's

goals & direction set forth in closing the knowledge gap especially concerning safety it is surprising that these experiences occurred

The participants also identified methods that they used to learn their job. They learned from their mistakes and the positive methods were those of hands on, field training, and learning from those who had more experience.

Participants were able to cite examples of inconsistencies between what leadership says it values and what its decisions, through the implementation of the training program, indicated that it valued/expected. The values and strategic statements of the organization's leadership were all contradicted in action. How could this happen when everyone (leaders, superintendent and trainers) thought they were doing the right thing?

## **CHAPTER V**

### **Interpretation**

The purpose of this study was to explore the learning experiences of new employees and the influence that knowledge deficit had on their performance within an organization that was experiencing a massive loss of knowledge due to downsizing, attrition, and turnover. Also, the purpose was to explore the influence knowledge deficit had on safety in the organization. In this study, the data indicated that knowledge deficit had a negative influence on the new employees' learning experience, their performance, and safety in the organization. Throughout this chapter, I will include the participants' perspectives on these impacts. I will also connect my findings to (a) community of practice (CoP), the theoretical perspective for this research and (b) existing research.

The majority of the interviewees, namely production workers, believed that the learning opportunities provided by the target organization were ineffective. Poor classroom training, department trainers unable to teach or transfer knowledge, and a primary trainer who lacked effective oral communication skills were all areas of weakness expressed by the participants. Classroom training had a negative influence on their learning experience because they described the training as a waste of time. They reported that all they did was read papers; therefore, they did not learn anything, did not know what to expect once they were assigned to the field and could not recall any of the information. The interviewees also reported that the department trainers were unable to teach or transfer knowledge. They believed this negatively influenced their learning experience because the trainers were unable to explain in detail why tasks were to be done a certain way and as a result of this, employees did not understand everything they needed to know in order to carry out their jobs efficiently. In addition, the primary trainer lacked

effective oral communication skills. This influenced their learning negatively since they could not understand him, which led to them not learning anything.

Most participants also believed that the work environment did not leverage the inclusion of thought, experience and skills within the organization. The employees who transferred from another location shared many experiences of being treated with disrespect. For the most part, all of the participants described their learning experience in association with working at risk (safety) as a concern due to the mistakes made by them that could have caused injury to themselves and/or to others. The participants also believed the work environment did not encourage continuous learning.

Because of the organization's ineffective approaches to training, most of the participants reported that they learned instead from friends who were ready to help, guys that had been around the longest, actually getting into the field – hands on, and from those operators that were actually doing the job day in and day out. They felt that this was the most effective training. In addition, the participants reported interaction with each other in the department as a positive learning experience. They found value in sharing their experiences, getting together to solve problems, learning from each other, and being engaged in knowledge building. Still, they suggested the learning experience would have been better if they were learning from or with persons who had more experience. Despite the fact that the organization provided a variety of learning opportunities for the new hires, such opportunities included many barriers that inhibited productive learning for the new hires. The program fell short of having a measurement plan to determine the success and ROI of training.

To summarize, the employees were figuring out how to learn their jobs in spite of the perceived barriers the organization put in their path. Barriers mostly included (a) ineffective

training approaches, including apparently untrained trainers, (b) loss of knowledge due to losing the most experienced workers, which then created limited 'know how' among workers because they were all relatively new hires and (c) conflict between existing employees and those transferred in from another plant. Through it all, these workers formed their own communities of practice and peer to peer training system in the absence of managing and transferring knowledge by the organization.

Prior to downsizing, the workers had a very effective community of practice. They shared knowledge, mentored and coached new hires, and solved problems together. However, as a result of downsizing, attrition, and turnover, the community was unable to hold sufficient knowledge. Faced with receiving inadequate training, the workers did the best they could within their community of practice with the limited amount of knowledge they held among them. The workers discussed what did and did not work for them based on what they had learned through action which helped them develop particular ways of doing their tasks. They were influencing one another's knowledge and norms through a "process of coparticipation" (Fenwick, 2006, p.291). The community developed by the workers defined for them "what constitutes legitimate knowledge and practice" (Fenwick, 2006, p. 291). They also expressed that the impact of the community of practice on their individual learning was the greatest in task mastery, role clarification and in defining or demanding their particular competencies (Driver, 2002).

Community of practice provides an informal learning environment in which both novices and experienced employees may interact with each other, share their experiences, and learn from each other (Hara 2009). In this sense, organizational learning occurs in a community of practice (Hara 2009). Lave and Wenger (1991) suggest that with community of practice, new employees learn how to master their tasks by being mentored and trained by more experienced employees in



the same work unit. In addition, communities of practice have a desire to pass on experience to younger generations (Hara 2009). Lave and Wenger (1991) place great emphasis on the learning of newcomers to a community of practice, through *learning as participation in situated practices*.

Lave and Wenger (1991) in their theory of situated cognition argue that individuals learn as they participate in situ: by interacting with a particular community (with its history, assumptions and cultural values, rules and patterns of relationship), the tools at hand (including objects, technology, language), and the moment's activity (its purposes, norms, and practical challenges). (Fenwick, 2010, p. 191)

Although the new employees found communities of practice to be an effective way of learning, the organization did nothing to facilitate it. One possible reason for the organization not to have facilitated it, according to Wenger and Snyder (2000) is that

it's not particularly easy to build and sustain communities of practice or to integrate them with the rest of an organization. The organic, spontaneous, and informal nature of communities of practice makes them resistant to supervision and interference (Wenger & Snyder, 2000, p. 140).

In spite of the workers' best efforts to learn by forming their own communities of practice, the situations remained fraught with workplace danger. Both that and the conflict among existing and new employees meant the workers dreaded their workplace. It is apparent "an infrastructure in which communities can thrive, [or] measure the communities' value in nontraditional ways" was not provided (Wenger & Snyder 2000, p. 140).

Communities of practice can add value to an organization in several ways. They help drive strategy, solve problems quickly, transfer best practice, develop professional skills and help companies recruit and retain talent (Wenger & Snyder, 2000).

The data also indicate that the lack of knowledge in the department had a negative influence on the new employees' performance. Participants reported that knowledge deficit influenced their performance in several ways. First, they had insufficient skills. Because of this, they could not successfully carry out a process and experienced critical incidents and low production. Second, they wasted time and resources since it took a long time to complete tasks and they often had to repeat the work due to mistakes. Third, they were not contributing to business goals since they did not know how to perform tasks thus creating production issues. The body of literature on performance in relation to knowledge resonates with the findings of this study. Numerous studies on experts have shown that they possess greater knowledge than novices (Ericson & Smith, 1991). This is also reinforced by everyday experience. Performance seems to accompany knowledge, and experts clearly know more about the fields in which they are active (Ericson & Smith, 1991).

In general, the participants' views were that the lack of knowledge resulted in incidents, insufficient skills and poor performance. They reported that in order to improve the performance of new hires, the organization needed to increase field training and eliminate classroom training, have more knowledgeable supervisors and trainers, reduce the workload, and help each other more.

To summarize, the workers were faced with the obstacle of having peers that had not been there much longer than they had. In spite of their efforts to develop their own skills and competencies, and also to find ways to contribute to achieving business goals, they were

outgunned from the beginning because a lot of them just did not know what to do, or how to do their tasks. They lacked knowledge in these areas because of inexperienced coworkers and ineffective training approaches provided by the organization.

### **Inconsistencies between Actions and Words**

On analyzing the findings, it was clear that knowledge deficit had an influence on the learning experience and performance of the new employees, as well as on safety. As a result of this, three of the organization's key drivers – people, profitability, and knowledge were impacted in negative ways. Participants were able to cite examples of inconsistencies between what leadership said it valued and what its decisions, through the implementation of the training program, indicated that it valued or expected. The values of the organization's leadership, namely a focus on an inclusive work environment that encourages learning (with a focus developing highly skilled employees) while safely achieving the company's goals were all contradicted in action. The leaders absolutely had no intention of contradicting values or strategic statements. This was evident in their statements.

There were inconsistencies between what the organization's top management communicated in its people statement and what the participants actually experienced. This statement outlined that the organization provided an inclusive work environment that emphasized, respect, health and safety, and encouraged continuous learning with a focus on developing highly skilled employees. Some of the participants who transferred from other locations viewed the work environment as non-inclusive, and felt as though they were not wanted or respected in the organization. In addition, they definitely did not feel as if they drove its success.

There were inconsistencies with the statement of profitability. This statement focuses on profitable growth, emphasizing that the business must have a plan beyond growing profit. Money, time and resources were wasted on the ineffective approaches to learning provided by the organization – mainly the classroom training. The quality of the classroom training was poor and wasted both the new employees' and the company's time and money simply because that is not how they learned.

Leadership's knowledge statement focuses on the need to have highly skilled employees who were willing to share their ideas to assist in accomplishing business goals. Yet, there were also inconsistencies found between this statement and the actions involved in the delivery and implementation of training. The participants made errors, caused environmental non-compliance, violated safety procedures, and they contributed to the production of poor quality products - all as a result of the lack of skills.

The unsafe behavioral practices exhibited by the participants were not aligned with the plant manager's stated value or with the safety principles of the organization. Safety first is what the organization teaches and practices. Yet, findings from this study indicate that this was not always practiced. The violation of safety procedures is totally against the leader's values and expectations.

To summarize, the organization's internal governance – that is, its vision, values, principles and corporate policies— were contradicted in action. According to its top management, the success of the company depends on its ability to create innovative solutions that exceed customers' goals. This is achieved by leveraging an inclusive work environment of thought, experience and skills within the organization. They also say that to become a premier destination, the organization has to achieve a high-performing culture by ensuring that all

employees worldwide are respected, included, and encouraged to realize their greatest potential. However, because of the inconsistencies between the organization's words and its actions, the employees were unsure of what was expected and some were cynical towards leadership's statements. As such, they were not quick to enact policies mandated from above their levels. Their behavior resulted from a lack of strategy to purge costly inconsistencies by both employees and managers within the business (Ducoff, 2013).

Despite the increase in literature on corporate transformation which has emphasized the role of top officer and management team in setting the mission, policy, and strategy, there are no evidences yet that this has been an effective mode of getting everyone to buy in on change or transformation (Kilman & Covin, 1988). The top down approach was ineffective because not everyone in the studied organization was accountable for conforming with and deploying the organization's safety values and principles. According to Ducoff (2013), when systems, values, or leadership statements are compromised, inconsistent results occur. These results, often linked to for example, material wastes, increased labor cost or missed deadlines within organizations, impedes forward progress.

### **Chapter Summary**

Knowledge deficit had an impact on the learning experience and performance of the new employees. It also had an impact on safety in the organization. The organization provided ineffective training approaches to learning (despite the effort of quality training) that led to the employees forming their own communities of practice. However, the employees still faced barriers of workplace danger and conflict amongst existing and new employees.

In addition, a lack of knowledge negatively impacted performance because everyone was relatively new to the organization and did not know what to do or how to perform their tasks.

Employees were unable to contribute to business goals and production issues were created due to the lack of skills.

Safety in the organization was impacted by lack of knowledge. Employees were subjected to working at risk due to inadequate training. Safety procedures were violated which were at times serious enough to cause injuries. In addition to the impact on safety, the leaders' values and strategies statements did not align with the key drivers of the organization. How? The leaders put safety first in the training of its employees, they mandate safety and it's the organization's number one priority. Those in charge did everything in their will power to provide a safe work environment.

## **CHAPTER VI**

### **Summary and Conclusion**

This study has been conducted using an interpretive paradigm and a qualitative, instrumental case study research methodology. The purpose of the study was to explore the learning experiences of new employees and the influence that knowledge deficit had on their performance within an organization that is experiencing a massive loss of knowledge due to downsizing, attrition, and turnover. In addition, the purpose was to explore the influence knowledge deficit had on safety in the organization.

The study identified several ways in which the participants' learning experiences, performance and safety were influenced. These included the classroom training not being effective, department trainers who were unable to teach/transfer knowledge, trainer lacking effective oral communication skills, low productivity and critical incidents due to insufficient skills, waste of time and resources, not contributing to achieving business goals, and most significantly, working at risk and getting hurt due to inadequate training.

In addition, the workers were able to cite examples of inconsistencies between what leadership says it values and what its decisions, through the implementation of the training program, indicated that it valued or expected. The values and strategic statements held and made by members of the organization's leadership team were all contradicted in action.

I will begin this chapter by discussing the overall significance of the study for practitioners, leadership personnel, policy-makers, and researchers. I will then include a reference to an existing theory – that is, to the knowledge-based theory of the firm. Finally, I close the chapter with a general summary.

### **Significance of the Study**

The downsizing strategies utilized by the organization studied continued to be focused on reduction in one way—that is, a focus on the reduction of the organization’s size without interrelationship between downsizing and knowledge retention to avoid knowledge deficit. Despite research efforts to date, learning experiences and the performance of new employees within an organization that is experiencing a massive loss of knowledge due to downsizing remains an immature research field lacking integrative initiatives. Therefore, the importance of this study is to determine what, if any, influence downsizing has on new employees’ performance, and learning experiences in the organization. Also, based on what I discovered concerning unsafe work practices in the early stages of collecting and analyzing my data, the impact of downsizing on safety became a very important finding in this study.

### **Significance for Practitioners**

In circumstances where employees cannot perform their tasks competently because of insufficient knowledge as a result of downsizing, the following suggestions for approaches to effective training were made by the workers:

- Concise classroom training modeled after the work in the field.
- More participant engagement.
- Use as much hands on training as possible.
- Provide good communicators that speak well and express their thoughts clearly.
- Ensure the trainers are knowledgeable. They should understand all the concepts, know all the details and have the ability to answer questions thoroughly and at a level that trainees understand. They must have the ability to transfer knowledge.



- Have more experienced trainers. Those that know what they are talking about and have been in the field doing what they teach in the classroom.
- Require fewer classroom hours and more field training opportunities that are designed to help employees learn from the most experienced personnel.
- Provide a safe learning environment.

Most of what the workers shared in the aforementioned list of suggestions has also been documented in the research literature for years. These ideas are considered “best practices” in training. Watkins’ and Marsick’s (1997) suggestions, for example, align with the workers’ suggested recommendations. Watkins and Marsick (1997) suggest that learning is a constant process and results in changes in knowledge, beliefs, and behaviors. In addition, it is their belief that the learning process is a social one and takes place at individual, group, and organizational levels. The following list outlines organizational strategies recommended to promote learning as are similar to what the suggestions made by the workers in this study. According to Watkins and Marsick (1997), organizations should,

1. create continuous learning opportunities;
2. encourage systems to capture and share learning;
3. encourage collaboration and share learning; and
4. connect the organization to its environment. (p.218)

Galbraith (2004) also offered principles of effective practices including the following two that are similar to what the workers suggested:

1. It is important to attend to how learners experience learning.
2. Challenging teaching and learning interactions should occur that present learners with opportunities to ...develop alternative ways of thinking and acting. (p.218)

In situations in which safety is a concern, the study points to the need for training and human resource development professionals to make sure the approach to building a new knowledge base is sufficient. The study shows that inadequate attention to this can place employees in danger.

### **Significance for Policymakers**

Initially, the study was not focused on the influence downsizing has on safety because I did not anticipate that the study would point to employees working in an unsafe work environment. Both federal and state laws exist that protect workers from unsafe working environments. In addition, safety is profoundly important to a company's reputation and its bottom-line. The greatest risk to reputation is costly legal battles. Whether a case is won or lost is less relevant than the bad publicity that accrues from media interest in the corporation as a result of safety issues. Once an organization has an incident, situations such as negative media attention, legal problems, low employee morale, well-being of the affected workers, as well as regulatory agency charges could be severe.

Not only did the study point to a concern with safety but it also pointed to a compromise in productivity associated with not considering the knowledge base needed to perform the job. Downsizing initiative should not focus on across-the-board personnel reductions without considering the risk to its learning investment, and should adhere to recommendations from the review of literature that an integrated framework that allows for analyzing the relationship between employee downsizing and knowledge retention should be utilized (Weick, 1995). This approach maximizes the opportunity to “maintain connectivity between critical individuals and to maintain high performing units as well as maintain employee rewards to increase psychological safety” (Weick, 1995, p. 16). Managers and HR professionals who continue to

implement across the board percentage cuts miss the opportunities to minimize the risk for loss of tacit knowledge, damage to the communities of practice, and the loss of routines or standardized behavior.

This research has both tactical and strategic importance to organizations seeking to reduce the loss of knowledge from downsizing. In the tactical sense, more effective knowledge sharing will occur if an appreciation for employee's preferences for specific knowledge transfer is taken into consideration. Organizations can enhance not only knowledge retention but also capture tacit knowledge by facilitating communities of practice or social networks among knowledge users. If communities of practices or social networks are an organizational strength, the organization's leaders should build upon the communities of practice by implementing enhancements rather than try to disrupt them, or fail to address their concerns. In such workplace environments where there is a formalized training program and orientation efforts established, it is critical that the program and orientation be evaluated as successful to ensure that knowledge transfer is effective.

### **Significance for Leadership**

The organization's leadership on multiple levels had their voices heard through strategic statements, as well as statements concerning values, people, and safety. Yet, as part of the study, workers reflected on and cited ineffective training approaches, unsafe working environment, and reasons for not being able to achieve goals. With awareness gained from this research, leadership was inconsistent when what it said was compared with what it actually did. This kind of inconsistency is in line with Argyris' and Schon's (1974) espoused theory and theory in use. According to these theorists, the espoused theory (or expectation) is often different from the theory-in-use (what actually occurs).

The leaders stated that they wanted to have knowledgeable employees to help achieve business goals, and that knowledgeable people were the key to their success. Although they stated these desires, the question still remains, how did some of the behaviors occur based on the strong values of leadership, particularly safety?.

### **Knowledge-Based Theory of the Firm**

The workers' responses to questions in my study and the leadership's voice through values and strategic statements concur with what we know about knowledge-based theory of the firm. It is not new idea that knowledge is considered the most strategically significant resource of a firm. According to Grant (1996), this knowledge is embedded and carried through multiple entities including organizational culture and identity, policies, routines, documents, systems, and employees. Based on the findings in this study, what is new is how existing theory on knowledge-based theory of the firm reflects the influence knowledge deficit has on the learning experiences, performance of the new employees, and safety in the organization.

One of the emphases on knowledge-based theory of the firm is the knowledge requirements of production. "Production involves the transformation of inputs into outputs. Fundamental to a knowledge-based theory of the firm is the assumption that the critical input in production and primary source of value is knowledge" (Grant, 1996, p.112). When the new employees in the studied organization were able to gain and transfer knowledge, they felt as if they were contributing to the organizational goals by achieving production targets.

Based on the findings in this study, the participants tend to agree with what we know about knowledge-based theory of the firm. Most participants desired effective training approaches so that they can gain the knowledge needed to (a) reduce production errors and ultimately, contribute to achieving goals.

### **Recommendations for Further Research**

This study suggests a number of topics for further research. The workers described their experiences and I was able to find answers to my research questions. However, the findings suggest other areas for future research.

1. A study is needed to determine if training and human resources planning should be elevated above the typical return on investment metric in order to address safety concerns.
2. A study is needed to determine whether the learning experiences and performance of salary employees are influenced by knowledge deficit, or whether it is only a factor for hourly employees.
3. Additional studies are needed to address not only the ineffectiveness of the training process but the qualities of the knowledge they yield.
4. A study is needed to examine more than one of the 353 facilities of this organization to help confirm whether knowledge deficit due to downsizing influenced the learning experiences and performance of new hires, and whether a threat of safety in the organization is typical in all of the organization's downsized facilities.

### **Limitations**

A major assumption of this study is that all participants responded willingly and without fear of repercussions, due to the researcher's position as human resources manager. It is possible that participants were concerned about the privacy or confidentiality of their responses, causing fewer to participate fully (Couper, 2000). However, I did not find it to be a concern of the participants. In addition, a limitation in the present study arose from biased perspectives of the downsizing process and knowledge retention since I am also a senior manager at the refinery.

My specific bias was my drive to close the knowledge gap of new employees in the workforce. Although I applied control strategy, it was still impossible to eliminate all possible occasions of researcher bias. Perhaps a more unbiased researcher could have made different interpretations of the data.

There are other notable limitations to this study. It was limited to one of 353 locations of the global organization and was conducted by one researcher. This limits the results of the study. Also, the perceptions of the 10 employees examined in five interview groups may differ from the opinions of the remaining 405 employees of one location; therefore caution is urged regarding transferability. Another limitation is that all of the interviewees were hourly employees. The implications for salaried employees are likely to be different and potentially critical to the organization's success.

The transfer of employees from other locations contributed to situational differences, exacerbating the limitations. This made it impossible for me to make a completely accurate assessment of the reasons why those who were transferred from other locations perceived that their learning experiences and performance were influenced by knowledge deficit as a result of downsizing.

### **Chapter Summary**

Knowledge retention should be encouraged within organizations that are concerned about the effectiveness of the performance of new employees, as well as the learning experiences they will encounter. Because effective organizational performance depends on the knowledge input from all levels and parts of the organization, policies and strategies for implementation should be developed with an insight on how to proactively reduce potential knowledge losses during future employee downsizing.

Leaders and managers should ensure that such policies and strategies are designed to include effective training approaches for learning, with a focus on developing highly skilled employees within a risk free environment. Location leaders should also involve themselves in workplace learning by supporting and encouraging an environment that would safely achieve the company's goals. In short, the leaders of the organization should ensure that (a) the policies and strategies used to address this issue (employees' learning and performance influenced by knowledge loss, as well as an impact on safety) are aligned with the key drivers of the organization and that (b) their actions during the implementation are aligned with the key drivers of the organization.

## APPENDIX SECTION

### Appendix A

#### Knowledge Deficits in Manufacturing and Their Influence on New Employees

##### Participant Selection Data Sheet

Pseudonym	Gender	Department	Number of Years of Service
I-1	M	Precipitation	1.5
I-2	M	Precipitation	2
I-3	M	Precipitation	2
I-4	M	Precipitation	3
I-5	M	Precipitation	2
I-6	M	Precipitation	3
I-7	M	Precipitation	1.5
I-8	M	Precipitation	2
I-9	M	Precipitation	3
I-10	M	Precipitation	2.5



## Appendix B

### Knowledge Deficits in Manufacturing and Their Influence on New Employees

#### **Individual Interview Protocol**

I will begin the interview by going over the consent form with the participant.

Thank you for agreeing to talk to me today. Although your responses will be recorded on tape, what you say will remain confidential. The purpose of my study is to explore the learning experiences of new employees and the influence that knowledge deficit has on their performance within an organization that is experiencing a massive loss of knowledge due to downsizing, attrition, and turnover.

1. What did you do to learn how to do your job when you were first hired?
2. Who was most helpful?
3. What aspects of training were most useful to you?
4. Think of a time when you couldn't successfully carry out a process because you lacked the training. What happened? What did you do?
5. If you were to hope for something that would mean other new employees wouldn't have to go through what you went through and would have the skills and knowledge to carry out their assigned work, what would you hope for?
6. What do you like best about the training you've received? What are your hopes for improving training for yourself and future employees?
7. Do you and other workers on your crew interact with each other, share your experiences, and learn from each other? Improve your practice? Describe for me an example of that.
8. Describe for me an example of how you and your crew members engage in knowledge building. Discuss the "meaning" or the "why" behind the practice?
9. Describe one of your best learning experiences and tell me why it was the best.
10. Tell me about any critical incidents you experienced related to not knowing enough in order to perform the required tasks of your job.

11. Reflect on how more experienced trainers who are knowledgeable about the process can help you and the organization achieve goals.

12. What sort of approach do you use to inform yourself of everything that is required to complete a task? Give me an example of how you have used it lately.

13. What do you need to perform your job better?

14. Tell me about a time when you have noticed that because of the lack of skills/knowledge, productivity was negatively impacted.

My goal is to provide context for understanding the participants' learning experience and the influence knowledge deficit has on new employees. I will ask follow up questions and ask participants for specific examples if necessary.

## Appendix C

### Knowledge Deficits in Manufacturing and Their Influence on New Employees

#### Consent Form

You are being asked to participate in a research study. This form provides you with information about the study. The person in charge of this research will describe this study to you and answer all of your questions. Please read the information below and ask any questions before deciding whether or not you would like to participate. Your participation is voluntary. You may choose not to answer a question(s) for any reason.

**Title of Research Study:** Knowledge Deficit: What's the Effect on the New Employee?

Principal Investigator/Dissertation Chair

Helen Gadsden-Ross, Texas State University, Doctoral Student, 361.935.0411

Ann Brooks, Ph.D., Texas State University, Professor and Dissertation Chair, 512.245.1936

**Purpose of the Research Study:** The purpose of this study is to explore the learning experiences of new employees and the impact that knowledge deficit has on their performance within an organization that is experiencing a massive loss of knowledge due to downsizing, attrition, and turnover. An interpretive approach will guide this study and data will be gathered through semi-structured interviews and observations. The interpretive approach will allow participants to reflect while engaging in the semi-structured interview process on the impact downsizing has had on their learning experience.

**Participation:** If you agree to participate in this study, you will be asked to participate in the following:

Employee: Face to face interview that will last approximately 60 minutes. You will be asked: What did you do to learn how to do your job when you were first hired. Who was most helpful? What aspects of training were most useful to you? Think of a time when you could not successfully carry out a process because you lacked the training. What happened what did you do? If you were to hope for something that would mean other new employees wouldn't have to go through what you went through and would have the skills and knowledge to carry out their assigned work, what would you hope for? What do you like best about the training you've received? What are your hopes for improving training for yourself and future employees? Do you and other workers on your crew interact with each other, share your experiences, and learn from each other? Do you improve your practice? Describe for me an example of that. Describe for me an example of how you and your crew members engage in knowledge building. Discuss the "meaning" or the "why" behind the practice? Describe one of your best learning experiences

and tell me why it was the best. Tell me about any critical incidents you experienced related to not knowing enough in order to perform the required tasks of your job. Reflect on how more experienced trainers who are knowledgeable about the process can help you and the organization achieve goals.

**Benefits:** The experiences you share and the information you provide will inform the location's downsizing practices. Additionally, this study will highlight the potential risk of knowledge deficit and raise awareness of the importance of combining knowledge retention and employee downsizing. The ultimate benefit is that this study will reveal recommendations that can be utilized to maintain connectivity between critical individuals, maintain high performing units, and to engage key leaders early in employee downsizing. These recommendations will ensure the future of knowledge management during downsizing.

**Risks:** This study will have minimal to no psychological/emotional risks, no risk of physical harm, and is non-experimental. The interviews will be digitally recorded which could cause you to be somewhat uncomfortable. In addition, I will be observing classroom and field training which could result in you becoming slightly stressed.

**Compensation:** You will receive your regular rate of pay if you participate in the study.

**Confidentiality:** All interviews will be digitally recorded and transcribed. The recordings and transcriptions will be coded in a manner to avoid revealing your identity. Also, the recordings and transcriptions will be secured in a locked file cabinet at the principal investigator's home. The principal investigator and the dissertation chair are the only individuals who may review this information.

**Signatures:** By signing this document, you are indicating that you fully understand the consent form and its contents. You have been given the opportunity to ask questions and have been told that participation in this study is voluntary.

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Printed Name of Participant and Date

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Signature of Participant

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Printed Name of Principal Investigator and Date

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Signature of Principal Investigator

## Appendix D

### Knowledge Deficits in Manufacturing and Their Influence on New Employees

#### Documents

Data Source	Dissemination Method	Role: What does it do for consumers of information?
Monthly HR Metric Report	Personal P drive	Provides tracking of hiring, terminations, quits, retirements, turnover, HR financials
Employee Verification Report	Personal P drive	Provides employee demographics
Mine Safety and Health Administration (MSHA) Task Forms	Hardcopy	Informs trainers and supervisors of employees that have been trained/qualified in job specific tasks
Training Curriculum	Hard copy	Informs the trainer of what needs to be taught based on the task, the hours required, method of teaching (i.e. video, classroom, or field)
Injury Reports	Hard copy	Provides information on type of injury, years of service of injured employee, injury caused by (inexperience, faulty equipment, lack of process knowledge, etc.)

## Appendix E

### Knowledge Deficits in Manufacturing and Their Influence on New Employees

#### Field Notes

##### 4/3/12

Observed classroom training – 4 out of 7 employees nodding off. Instructor reading slides verbatim. Didn't allow time for questions until the end. No one had questions.

Trainer not very effective in engaging the workers. I understood the boredom.

##### 4/5/12

Attended 1<sup>st</sup> day of new hire orientation class – Attentive group – policies, procedure, introductions, lunch – well communicated, good group discussion.

##### 4/9/12

Sat in on New hire classroom training:

8-10 watched safety videos (group struggled to stay awake)

20 min – break

10:30 – 11:30 – read standard work instructions

11:30 -12:30 – Lunch

12:30 – 3:30 – Read standard work instructions

Once again, group struggled to stay awake. It was obvious to me that the information provided would not be retained once the workers were sent to their departments.

##### 4/16/12

Field training – very noisy - couldn't hear the training. Didn't appear workers were engaged. I heard two of them say they couldn't hear and didn't know what was going on. They were in the back of the group of 8.

Trainer did not have good communication skills.

##### 4/20/12

## Appendix E (continued)

### Knowledge Deficits in Manufacturing and Their Influence on New Employees

#### **Field Notes**

Attended departmental training. Observed safety procedures.

**4/23/12**

Attended the hands on training in bldg. 13 and all were engaged as they worked on process models. Lots of questions were being asked and they were working in groups discussing what they should and should not be doing and why.

## Appendix F

### Knowledge Deficits in Manufacturing and Their Influence on New Employees

#### Interview Codes

First Interviewee:	I-1 (TFOP)
Second Interviewee:	I-2 (5UOP)
Third Interviewee:	I-3 (TCIR)
Fourth Interviewee:	I-4 (TRAP)
Fifth Interviewee:	I-5 (SEOP)
Sixth Interviewee:	I-6 (TCIR)
Seventh Interviewee:	I-7 (SEOP)
Eighth Interviewee:	I-8 (5UOP)
Ninth Interviewee:	I-9 (TFOP)
Tenth Interviewee:	I-10 (TRAP)



## Appendix G

### Knowledge Deficits in Manufacturing and Their Influence on New Employees

#### Relationship of Research Questions to Interview Questions

Research question	Data needed	Source of data	Analytic strategy
1. How does knowledge deficit influence the learning experiences of new hires?	Employee description of how they have gone about learning (or not learning) to do their job	<p><b>Interview questions:</b></p> <p><b>1.</b> What did you do to learn how to do your job when you were first hired?</p> <p><b>2.</b> Who was most helpful?</p> <p><b>3.</b> What aspects of training of training were most useful to you?</p> <p><b>6.</b> What do you like best about the training you've received? What are your hopes for improving training for yourself and future employees?</p> <p><b>7.</b> Do you and other workers on your crew interact with each other, share your experiences, and learn from each other? Improve your practice? Describe for me an example of that.</p> <p><b>8.</b> Describe for me an example of how you and your crew members engage in knowledge building. Discuss the "meaning" or the "why" behind the practice?</p> <p><b>9.</b> Describe one of your best learning experiences and tell me why it was the best</p>	Read interviews over several times carefully; Do first level of coding according to research question; Code data, cluster into categories, look for similarities and differences in categories; relate clusters into themes; describe and make sense of themes according to component clusters.

2. How does knowledge deficit influence the performance of new hires?	Employee description of how knowledge or the lack of knowledge has affected their performance	<p><b><u>Interview questions:</u></b></p> <p><b>4.</b> Think of a time when you couldn't successfully carry out a process because you lacked the training?</p> <p><b>5.</b> If you were to hope for something that would mean other new employees wouldn't have to go through what you went through and would have the skills and knowledge to carry out their assigned work, what would you hope for?</p> <p><b>10.</b> Tell me about any critical incidents you experienced related to not knowing enough in order to perform the required tasks of your job.</p> <p><b>11.</b> Reflect on how more experienced trainers who are knowledgeable about the process can help you and the organization achieve goals.</p> <p><b>12.</b> What sort of approach do you use to inform yourself of everything that is required to complete a task? Give me an example of how you have used it lately.</p> <p><b>13.</b> What do you need to perform your job</p>	Read interviews and documents over several times carefully; Do first level of coding according to research question; Code data, cluster into categories, look for similarities and differences in categories; relate clusters into themes; describe and make sense of themes according to component clusters.

		<p>better?</p> <p><b>14.</b> Tell me about a time when you have noticed that because of the lack of skills/knowledge, productivity was negatively impacted.</p>	
	Comparative employee performance measures before and after downsizing.	<p><b>Document Review</b></p> <p>Performance data from 1999-2011; Annual performance data since downsizing.</p>	Compare years according to performance indicators in instruments
	Avg amount of time and # of employees qualified/trained in specific job tasks	Mine Safety and Health Administration (MSHA) Task Forms from 1999-2011	Compare years according to performance indicators on qualified./trained
	Years of service of injured employees caused by inexperience/lack of process knowledge	Injury Reports from 1999-2011	Compare the # of new employees (1-3) injured to those > 3 yr due to lack of process knowledge.

## Appendix G (Continued)

### Knowledge Deficits in Manufacturing and Their Influence on New Employees

#### Relationship of Research Questions to Interview Questions

Research Question	Data Needed	Source of Data	Analytic Strategies
3. How does knowledge deficit influence the safety in the organization?	Employee description of how knowledge or the lack of knowledge has affected their performance	Analysis of Data Note: I found this out during the analysis of my data. It was unexpected.	Read and reread the analysis and coded common themes of safety

## Appendix H

### Knowledge Deficits in Manufacturing and Their Influence on New Employees

#### Data Reflection Document

Interview (I-1)– Practically begging for mgt to listen and “come & see”. Very passionate about his work.	Interview (I-2) – just want to put in his hours and to be left alone. Just doing what he is told. Good friends with an experienced guy and doesn’t have issues with learning what to do like others.
Interview (I-3) Transferred from another location does not feel wanted. Believes he has been given all of the tasks no one wants to do. Hates coming to work.	Interview (I-4) – Transferred from another location – feels unwanted. Hates the environment. Fears for his safety.
Interview (I-5) – Worries about his safety because he doesn’t feel he is ready to work alone.	Interview (I-6) – Likes the crew he is on because they have each other’s back. They help each other out when needed. They teach each other what they don’t know.
Interview (I-7) – Transferred from another location and had no idea it would be so difficult. Amazed at the amount of work that is required.	Interview (I-8) – Somewhat of an introvert. Gave very brief answers.
Interview (I-9) – Looking for another job daily.	Interview (I-10) – Does not feel that he has all the skills to safely perform his tasks.

## Appendix I

### Knowledge Deficits in Manufacturing and Their Influence on New Employees

#### Themes from Combined Coding Definitions

<b><u>THEMES</u></b>	<b><u>CODE</u></b>	<b><u>CODING DEFINITION</u></b>
People	PCL+ PCL- PR PH&S PD PPABSG PCOP	Working environment that encourages or discourages continuous learning, respect, health & safety, and emphasizes diversity. Being held accountable. Impact of production before safety on people. Passionate about achieving business goals. Community of practice
Financial	FETCT FPNI FLWDI	Extended time to complete task. Productivity negatively impacted. Lost workdays due to injuries. Incidents due to lack of experience.
Knowledge	KET KIET KPL KNL	Effective training, ineffective training, Positive learning experiences, negative learning experiences.

#### Meaning of Codes:

PCL+ = People - Continuous Learning (Working Environment Encourages)

PCL- = People - Continuous Learning (Working Environment Discourages)

PR = People - Respect

PH&S = People - Health & Safety

PD = People – Diversity

PPABSG – People- Passionate About Achieving Business Goals

P – People – Community of Practice

KET – Knowledge – effective training

KIET – Knowledge – ineffective training

KPL – Knowledge – positive learning experiences

KNL – Knowledge – negative learning experiences

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