

An Investigation of the Internal Corporate Factors of Organizational Learning and
Innovation

A DISSERTATION
SUBMITTED TO THE FACULTY OF THE GRADUATE SCHOOL
OF THE UNIVERSITY OF MINNESOTA
BY

Elizabeth Bechtel Jayanti

IN PARTIAL FULFILLMENT OF THE REQUIREMENTS
FOR THE DEGREE OF
DOCTOR OF PHILOSOPHY

Dr. Alexandre A. Ardichvili

August 2013

© Elizabeth Bechtel Jayanti, 2013

Acknowledgements

I would like to express my gratitude to my advisor, Dr. Alexandre Ardichvili, for giving me the freedom to broadly explore the field and for reading numerous drafts of papers and manuscripts as the topic coalesced.

I am indebted to Dr. Frances Lawrenz for her close reading of my manuscript and her insight that the reviewed organizational learning models are theoretically-based; if not for this, the study would look very different now. The change in methodology was an extremely rewarding experience.

I would like to thank Dr. David Christesen for his advice, for chairing my committee, and for ensuring that this study was grounded in industry relevant insights.

I would like to thank Dr. Catherine Twohig for her close attention to qualitative methodology and her rich participation in my defense.

A special thank you goes out to all of the anonymous participants who shared the gifts of their time and wisdom with me. It is only because of your generosity of spirit and willingness to share your experiences, insights, and perspectives, that this research was possible! Thank you.

Dedication

This dissertation is dedicated to my family. I would like to acknowledge my late father, Dr. Dennis Duane Bechtel (1948-2001), who inspired me on this journey. I am grateful to my husband, Dr. Jay Jayanti, for his support which made this study possible. I would like to thank my Mom for all of the good things she has done. Most of all, I am indebted to my daughter, Anjali, for her patience and humor; may you realize that dreams come true.

Abstract

This study answers the question, "What are the dimensions of the *organizational learning* experience?" from the perspective of 35 members of four leading companies, representing the first such empirical effort. A review of over 1,368 articles revealed that current *organizational learning* models are based in *theory* rather than *practice*, frequently reduce *organizational learning* to the *individual level*, and focus on *external* factors to the neglect of *internal* factors. While research on *organizational learning* dates back to work by Cyert and March (1963), fifty years later, empirical answers to the following questions were still lacking:

- What happens to information as it is processed through the organization?
- What predictable screening biases are there in an organization?
- What is the relation between decisions made by the responsible representatives and the final *decision* implemented by the organization?
- In what systematic ways are decisions elaborated and changed by the organization? (Cyert & March, 1963, p. 21-22).

Fifty dominant *organizational learning* survey instruments were closely reviewed. It was discovered that each instrument was based on theoretical models, rather than real-world organizational data. This meant that it was unknown whether any dimensions of *organizational learning* had been missed, or if the assumed dimensions were correct.

Questions for the interview were drawn from questions that appeared in multiple previous instruments and focused on the *organizational* rather than *individual* level. Data

was recorded and transcribed verbatim. Scrubbed transcripts were analyzed in Nvivo using a grounded theory approach.

This study found no evidence for several assumed dimensions such as *decision types*, *decision proactivity*, *role clarity*, *knowledge turnover*, and *market share*. It was determined that the long-standing idea of *controlling for industry* is not practical.

Finally, this study discovered that *organizational learning* is significantly influenced by *company culture*, which constitutes a way of being. This culture shapes what actions a company takes in areas of *knowledge management*, *client focus*, *focus for growth*, and *engagement*. What a company does ultimately influences what a company becomes, through *organizational learning*.

keywords: organizational learning, learning organizations, decision making, epistemology, perception, organizational myopia, sensemaking, innovation

Table of Contents

List of Tables	viii
List of Figures	ix
Chapter 1: Introduction	1
Purpose of the Proposed Study.....	5
Chapter 2: Literature Review	11
Overview of Epistemological Perspectives.....	14
Review of Positivist Perspectives	16
Positivism: Individual-level learning perspective.	16
Positivism: Odd couple perspective of knowledge management.	17
Positivism: External Alignment perspectives of organizational learning.	18
Positivism: Internal Fit.	19
Positivism: Simulated-systems perspective.....	20
Review of Pragmatic Perspectives	22
Pragmatism: Organizational becoming perspective.	23
Pragmatism: Analogical perspectives.....	24
Pragmatism: Analogical perspective-linguistic analogical models.	25
Pragmatism: Analogical perspective-computer simulation models.	28
Pragmatism: Analogical Perspective-complex systems analogical models.	28
Pragmatism: Analogical perspective-open organizational learning.	29
Pragmatism: Analogical perspective-corporate ecology.	31
Review of Post-modernist Perspectives	31
Post-modernism: Cognitive perspective.....	32
Post-modernism: Communities of practice perspective.	33
Summary	35
Theoretical Bases	38
Chapter 3: Method	52
Validation.....	56
Bracketing mechanisms and audit trails.....	57

	vi
Sampling.....	59
Research Method.....	64
Ethics and Human Subject Protections	69
Limitations	70
Chapter 4: Findings.....	71
Introduction	71
Organization of Findings.....	71
Demographics.....	73
Approach to Interpretation and Analysis	74
Unsupported Categories	79
Unsupported: Decision Types.	80
Unsupported: Decision Proactivity.....	82
Unsupported: Innovative vs. Cost-effective technologies.	83
Unsupported: Role Clarity.....	85
Unsupported: Knowledge Turnover.	89
Partially Supported Categories.....	90
Partially Supported: Training as an Area of Significance.	91
Supported Categories	96
Supported: Focus for Growth.	97
Supported: Employee Focus vs. Customer Focus.	101
Supported: Knowledge Management.	118
Supported: Engagement.....	136
Summary	149
Chapter 5: Conclusions, Interpretations, and Recommendations	155
Summary	155
Conclusions	158
Research Contributions and Implications	163
Recommendations for Further Research.....	178
Recommendations for Practice.....	183

	vii
References.....	193
Appendix 1. Participant Invitation Letter.	217
Appendix 2. Deliverable Attachment.	218
Appendix 3. Question Route.....	220

List of Tables

Table 1. Differences between epistemological orientations.	15
Table 2. Comparison of various discrete categories of simulated-systems models.....	22

List of Figures

Figure 1. Perspectives on Learning Organizations and Organizational Learning, N=1,368.	14
Figure 2. Interfirm Level of Analysis.	30
Figure 3. Theoretical Models Undergirding the Proposed Study.	39
Figure 4. Epistemological Modes.	45
Figure 5. Reasoning Processes.....	46
Figure 6. Theory Building Processes.	47
Figure 7. Piercean Categories.	49
Figure 8. Grounded Theory Approaches.	54
Figure 9. Reformulation of Corbin and Strauss Methodology.	56
Figure 10. Personal Biases.	58
Figure 11. Demographic Data.	74
Figure 12. Source Classification Categories.	77
Figure 13. Themes from Extant Literature, Supported, Partially Supported, and Unsupported Hypotheses, with an emergent category.....	79
Figure 14. Job Levels and Role Clarity.	86
Figure 15. Types of Training by individual.	93
Figure 16. Types of Training. Total overall mentions.	93
Figure 17. Focus for Growth by person.	98
Figure 18. Focus for Growth by total responses.	99
Figure 19. Employee vs. Customer Focus by individual respondents.	102
Figure 20. Employee vs. Customer Focus, total number of mentions.	103
Figure 21. Company Culture. Coded to individual responses.	107
Figure 22. Company Cultures, total number of mentions.....	107
Figure 23. Knowledge management, responses by individual respondents.	120
Figure 24. Knowledge management, total mentions.	121
Figure 25. Forms of Engagement, by person.	137
Figure 26. Forms of Engagement, total number of responses.	138
Figure 27. Herzberg's Satisfying Job Content Factors.....	151
Figure 28. Facets of Engagement.....	153
Figure 29. The Branches of Philosophy, including Epistemology.	156
Figure 30. Process of Organizational Learning.	160
Figure 31. Iceberg of Denotative and Connotative meaning.	189
Figure 32. Dimensions of Employee Engagement.	190

Chapter 1: Introduction

"The mind is its own place." –John Milton, *Paradise Lost*

The domain of Human Resource Development (HRD) deals broadly with adult workplace learning, in order to expand the human capital available to an organization and achieve performance improvement (Poell, Yorks, & Marsick, 2009), as measured by business objectives, which may be indicated in terms of learning, profitability, or financial benefits (Heeseok & Byounggu, 2003). Organizational knowledge can manifest itself in a variety of ways, including changes in cognitions, routines, and behaviors (Argote, 2011). Kanter (1983) and Van de Ven (1986) conceptualized organizational learning and its applications as principal processes in innovation. Bell (1976) and Drucker (1999) argued that knowledge was fast becoming a key resource in the emerging Post-Industrial economy, outpacing even the value of money in importance. As organizations are facing increasingly turbulent environments (D'Aveni, 2007; Slater & Narver, 1995) including globalization, accelerated technological change, and the intensification, decentralization, and destabilization of work (Dervitsiotis, 2006; Mckinley & Scherer, 2000; Sigglekow & Rivkin, 2005), the ability to learn in order to change and improve has become paramount. Under intense conditions of rapid change, it has been suggested that organizational learning may be the only source of sustainable competitive advantage for organizations (Bingham & Eisenhardt, 2011; de Geus, 1988; Spender, 1996), and further that there will continue to be *increased* learning requirements (Desai, 2010), especially as high-tech products and services may require training and development departments to support customers as well as internal staff (Jayanti, 2012).

According to Spender (1992), "Several lines of theorizing now converge on an emerging paradigm that finds the organization's identity and competitive advantage in the dynamic of its knowledge and skills" (p. 42) as opposed to previous static models of economic rationality and the concept of the firm. It has been suggested that "more than ever, organizational learning is a need rather than a choice" (Garcia-Morales, Ruiz-Moreno, & Llorens, Montes, 2007, p. 528).

Yet, despite a long research history into the construct of organizational learning tracing back to the 1950's (Schulz, 2001)--dating to beginning of management as a recognizable academic discipline, marked by the establishment of journals, a body of literature, a professional society, and research students (Spender, 1992)--and a recent resurgence in interest in the topic, current organizational learning models are limited. Indeed, despite the importance of understanding organizational learning, the organizational learning process remains a *black box* to researchers (Crossan & Berdrow, 2003). No single model of organizational learning serves as a framework for guiding academic research (Pawlowsky, 2003).

First, current organizational learning models are limited in terms of the fact that they are either *reductionist* or *generic*. Reductionist models try to reduce organizational behavior to individual-level actions. Yet, to the extent that organizations are different from individuals, reductionist models fail to capture the phenomenon of *organizational learning*. According to Curado (2006), "Individual learning is a necessary, but not sufficient, condition for organizational learning to occur" (p. 25). Organizations often rely on teams to accomplish work. It has been documented that in organizations in which individuals work well together, the organization may receive higher-than-anticipated

labor returns as the team produces more than each individual could do alone (Cummings & Worley, 2005). If an organization is in fact synergistic, such that it either exceeds or adds up to less than the sum of its parts (Delaney & Huselid, 1996), reducing organizational learning to individual-level learning may be erroneous. For example, although Ribbens (1997) suggested that directly applying Meyers-Briggs Type Indicator (MBTI) categories to the organizational level was a new organizational learning framework, to the extent that organizations are different from individuals, it may be flawed.

Generic models assume that the process of organizational learning is the same across all companies, regardless of context. Generic models tend to imply that all learning is good, and that *more* learning must be even better. Underlying this argument is the notion that *any type* of organizational learning intervention will have equal benefits, regardless of the organization's contextual conditions, and that more organizational learning is simply better. This ignores the reality that some learning interventions may serve to de-motivate learners, create situations which makes learning new information even more difficult than it might have been (i.e., requiring the need to unlearn particular information), or have otherwise negative consequences within the organization.

Arguably, with some technologies, it is easier to learn to use the technology without any background, than to unlearn one's use of previous technology. For example, it has been suggested that factories in India may have an easier time of adopting new manufacturing equipment than factories in the US because many Indian factories do not have previous generation machines to get rid of and technical habits to *unlearn*.

Perhaps more evident in practice, generic models overlook the fact that widely different results may occur when the same learning intervention is implemented in different organizational contexts. A case in point is that few organizational interventions have the same spectacular results that are recorded in popular management books or *Harvard Business Review* papers. It is unlikely that these wide variations are due to differences in HRD practitioners alone.

Finally, generic models fail to address organization-specific issues. Some practitioners have suggested that the generic models or *best practices* are too broad and vague to be very helpful in suggesting what should be done when a situation arises. Because of this failure to address practical issues, generic models are increasingly being rejected by scholars (Fang, Lee, & Melissa, 2010; Friedman, Lipshitz, & Popper, 2005; Heraty & Morley, 2008; Miller & Lin, 2010; Ortenblad, 2005).

Second, current organizational learning models focus solely on *external factors*. By analogy, this is like trying to understand how a car works without looking under the hood. You can only get so far in understanding the mechanics of a thing by looking at its chassis. Examining external factors is less useful now than it was in the past, since lowered barriers to entry mean that it is increasingly difficult to identify all competitors in a given market. National culture-based organizational learning models may be less impactful as companies become increasingly multi-national in scope.

Third, *all* of the prevalent organizational learning survey instruments were built solely from *theoretical models*, rather than using real world data for their basis. This means that HRD scholar-practitioners may not have identified all of the relevant dimensions of organizational learning, and this may have an impact on the type of theory

that exists. This may be of particular concern, since Cilliers (2005) warns that the higher the level of uncertainty and complexity that exists in the environment, the greater the impact of incompressibility on the reliability of models, such that we cannot predict the magnitude of value of the unknowns that we have left out of a model. Identifying internal factors of organizational learning in real-world contexts can help to reduce the gap between theory and practice. Arguably, since organizational learning is at the heart of HRD, to learn more about organizational learning is to improve the state of the field itself.

Purpose of the Proposed Study

"And why behold you the mote that is in your brother's eye, but consider not the beam that is in your own eye?" Matthew 7:3

The puzzle of why groups of people clearly see some things, but not others, has baffled philosophers and scientists for centuries. At its heart, this is essentially an epistemological question of perception. Within the arena of organizational science, many of the questions posed by Cyert and March (1963) regarding the processes of organizational perception and organizational learning still have not found firm or adequate answers in the documented research. For example:

- What happens to information as it is processed through the organization?
- What predictable screening biases are there in an organization?
- What is the relation between decisions made by the responsible representatives and the final *decision* implemented by the organization?
- In what systematic ways are decisions elaborated and changed by the organization? (Cyert & March, 1963, p. 21-22).

This study aims to find answers to at least some of these key questions, which fifty years later remain largely unexamined. The purpose of this study is to develop and provide initial testing of the hypothesis that organizational differences in *epistemology* mediate *organizational learning* and *innovation*. According to Waterman (1987), "Organizations, like people, are creatures of habit. For organizations, the existing habits are norms, systems, procedures, written and unwritten rules— 'the way we do things around here'" (p.16).

The Oxford English Dictionary defines *epistemology* as the theory or science of the method of knowledge. It combines the Greek prefix *ἐπιστημο-* which is a form of knowledge, with the suffix *-λογία* , indicating discoursing. At its roots, the term reflects a dynamic process of building knowledge. The term is a relatively late one, which first appeared in English in 1856. An epistemology may be understood as a process through which an individual or *group* (von Krogh, Roos, & Slocum, 1994) perceives information from the external environment (Kuhn, 1970; Weick, 1969) and transforms it into organizational knowledge through an organizational learning process. Since the amount of information an organization perceives may be overwhelming, the epistemology or lens through which it views the world, may be understood as a *heuristic* or short-cut, bounding the information to which the organization pays attention, versus that which it ignores (Miller & Lin, 2010; Tversky & Kahneman, 1981).

For the purposes of this study, epistemology is defined as:

- Emerging at the organizational level through *autopoeisis*, or self-generation and recursive processes, to create a perspective (von Krogh, Roos, & Slocum, 1994) that is interdependent (Weick, 1969) and shared among group members (Donmoyer, 1990; Engestrom, 2001; Knorr-Cetina, 1999; Tsoukas, 2005)

- Involving both the *generation* and the *arrangement* of abstract categories to create meaning from data (Simon, 1991; Thagard, 1996), such that organizations not only learn information, but also learn *how to learn* (Bateson, 1972)
- Impacting not only what the organization *sees*, but what it *does* (Clarke, 1997; von Krogh, Roos, & Slocum, 1994; Weick, 1969)

The process of transforming data into knowledge is a dynamic one where *what* information is acquired impacts the *types of abstract categories* that are created and ordered, and the *categories* that exist may promote or inhibit the acquisition of a piece of *new information*. In other words, *what* knowledge is acquired may influence *how* the abstract categories are arranged, which in turn may influence *what* further knowledge is acquired (Bateson, 1972). Organizational learning entwines both *knowing* and *doing* and asks, "Knowing what I know now, should I act differently?" (Weick, 1969).

The social process of *sensemaking* in organizations shapes both *conceptual schema* and, potentially, the *environment*. The enacted environment may constrain organizational action and can become a source for subsequent learning (Weick, 1969). If a company is a dominant player in the field, its learning and innovation may shift the entire competitive landscape (Miller & Lin, 2010). It has been suggested that firms that expand the variety of what they learn may build *absorptive capacity* in order to better acquire and utilize external knowledge (Garcia-Morales, Ruiz-Moreno, & Llorens-Montes, 2007; Nystrom & Starbuck, 1984) such as implementing technologies that competitors have learned (Nieto & Quevedo, 2005). Conversely, if an organization's learning is too narrow, this process may lead to *myopia* or *path dependence* whereby the organization continues to learn the sorts of things that it learned in the past, without

respect to the skills it will need in the current competitive environment (Curado, 2006; March, 1991).

For the purposes of this study, the process of *organizational learning* is defined as:

- Existing at the *organizational* level (King, Felin, & Whetten, 1991; Kuhn, 1970; Yorks, 2005), and providing a motivation or *will* apart from individual interests (Levitt & March, 1988)
- Indicating a change in organizational knowledge, that adds to, transforms, or reduces organizational knowledge (Cummings & Worley, 2005; Delaney & Huselid, 1996), and affects organizational behaviors and organizational outcomes (Schulz, 2001)
- Encompassing the sub-processes of creating, encoding, retaining, and transferring knowledge (Argote, 2011; Ebbers & Wijnberg, 2009; Karatas-Ozkan & Murphy, 2010; Newell & Simon, 1972), for instance, through routines and the matching of procedures to situations (Levitt & March, 1988)
- Persistently impacting organizational culture and actions over time even after the exit of organization members (Ford, 2008; Levitt & March, 1988; Sinkula, 1994) or changes in organizational systems, processes, and products (Tuttle, 2003) since groups vacillate less than individuals (Weick, 1969)

It is hypothesized that internal epistemological differences between organizations may impact how organizations learn--that is, acquire data, transform data into information, select what they learn vs. what they resist--and how they structure knowledge-sharing and decision-making processes, impacting performance and innovation. These epistemological differences may serve to set companies apart even when they are competing within the same industry arena, facing the same stresses and challenges, and encountering the levels of turbulence. In this view, is assumed that the decisions of the firm are not always uniquely determined by its *external* environment, but by its *internal*

decisions strategies or rules (Clarke, 1997; Cyert & March, 1963; Tversky & Kahneman, 1981). As such, there may be broad *types* of internal organizational epistemological differences. It is posited that *internal differences* in organizational epistemology may impact performance apart from *external competitive conditions*. In other words, companies are not just as ships set adrift in stormy waters, buffeted by the waves, but internal differences can help to steer, in order to navigate to a calmer harbor.

The purpose of this study is to find out how organizational epistemological differences work, and to provide initial testing of the hypothesis that organizational differences in *epistemology* mediate *organizational learning* and innovation. The practical benefits of being able to identify organizational *types* of epistemological differences are two-fold: one, if organizational epistemological differences can be identified in industry and in the workplace, it may be possible to identify predictable differences and systematic biases or forms of myopia such that organizations would be able to identify the gaps in their learning, *anticipate* market consequences, and better evaluate their risks. According to Snyder and Cummings, "Understanding the nature and consequences of learning disorders is a necessary step toward resolving them" (1998, p.874). This implies the possibility of correcting and overcoming myopia, which may significantly impact organizational lifespan. At a time when an estimated 15% of companies won't survive the first year, 30% won't survive beyond three years, and only 50% of companies will survive the first five years (Bjerke & Hultman, 2002), the possibility of extending organizational longevity may be especially consequential. Two, the flip side of the coin suggests that if systematic organizational epistemological differences in learning or organizational *types* can be identified, organizations may be

able to better identify which learning interventions will be best-received by the organization members, and which learning interventions will require comparatively more *scaffolding* or effort in order to effect change. According to the American Society of Training and Development (ASTD), an estimated 70% of learning interventions and organizational change efforts fail to transfer to the job (Paradise, 2008). In a context where U.S. organizations alone spent \$171.5 billion on employee learning and development in 2010 (Green, McDonald, McGill, Miller, & Pham, 2011), the economic cost of this failure is staggering. But perhaps more importantly, there is also a human cost to applying learning interventions and models which are entirely different from a company's ways of doing things. Such models may disrupt key organizational processes and cause *cognitive dissonance* and unnecessary pain to organizational members, who may be expected to learn and apply new skills quickly to the job context.

Chapter 2: Literature Review

"The only irreplaceable capital an organization possesses is the knowledge and ability of its people" –Andrew Carnegie

Fink (1998) defined literature review as a systematic, explicit, and reproducible design for identifying, evaluating, and interpreting a body of extant documents on a particular topic. Literature reviews help to ground new research in the previous historical data, and ensure that (1) a topic is significant within the field, and (2) that the research does not replicate what has already been done. Torraco (2005) suggested that research agendas flow naturally from analysis of the literature on a topic. According to Fendt and Sachs (2008), "the relationship between the researcher's paradigm, ontology, epistemology, and chosen method must be coherent" (p. 449).

The search terms *learning organization* and *organizational learning* were both selected for review because these terms were used interchangeably up through the mid 1990s (Chan, Cooper, & Tzortzopoulos, 2005; Massingham & Diment, 2009; Ortenblad, 2010; Sun & Scott, 2003). While *learning organization* and *organizational learning* are fairly discrete constructs—the former more strongly associated with practitioner literature, the latter associated with academic literature—it was believed that investigating the two sources independently might be important to better understanding the constructs. The literature search was conducted in three indexes: Business Source Premier, Academic Search Premier, and Emerald to provide a more dimensional perspective on the constructs under consideration. The terms *learning organization* and *organizational learning* were searched between the years 1982 and 2011, limited to peer-

reviewed articles available in full text. The term *learning organization* uncovered 269 such articles in Business Source Premier, 208 articles in Academic Search Premier, and 11,728 subscribed results—that is, articles in journals to which the University of Minnesota library has subscribed and has direct access. This large number of articles coming from Emerald appears to be due in part to the fact that the Emerald index included the journal *Learning Organization*, the *Journal of Knowledge Management*, and related search results, and in part due to the lack of ability to specify "peer-reviewed," and "full-text" filters in Emerald. Since searching by "keyword" limited the sample to just 10 results total, to limit this extreme number of articles uncovered in Emerald without obliterating the sample, the first 200 journal articles sorted by "relevance" were reviewed. The overall process led to a total sample of N=677 *learning organization* articles that were formally reviewed.

Literature review of the *organizational learning* literature commenced after the review of *learning organization* literature was completed. The term *organizational learning* was searched for scholarly, full-text sources appearing during the years 1982-2011. The search uncovered 514 results in Academic Search Premiere, 2,241 results in Business Source Premiere, and 191 results for Emerald in a search filtered by keyword. The first 250 results were reviewed for each database, except for Emerald, where all 191 sources were reviewed. This resulted in a sample of N=691 sources on organizational learning. In all, a total sample of N=1,368 articles were fully read and reviewed.

Notes about the articles were kept in a word document, and were organized by including a heading of the citation for the article, the search term used, the index searched, the parameters of the search (i.e., full text, scholarly, 1982-2011, subject term,

etc.), the number of results in the index, and the number of the article (i.e., number 57 out of 269 results). Ultimately, this culminated in 912 pages of notes about the literature. First, articles were sorted into categories which described their content. Following Strauss and Corbin's approach to *memoing*, visualizations were created representing the categories and their possible arrangement (Strauss & Corbin, 1990). Categories were revised in light of scrutiny of data and emerging codes and categories through *constant comparative analysis* (Glaser, 1992).

Each time that I felt that I had hit *saturation* with literature and things started sounding the same, I sketched out circles with categories to see if any patterns were starting to emerge. The earliest drafts of the classification involved simple non-overlapping bubbles for categories in a PowerPoint file. After reviewing both samples individually, I noticed a significant overlap of the constructs and patterns, and felt that this similarity was significant enough to warrant recombining the two samples, and treating them as a single sample for the remainder of the review (Figure 1).

The resulting order of literature into categories via the constant comparative processes was a fundamentally *semiotic* classification. That is, it resulted in three categories, which maximally contrast with each other, and perhaps reflect differing epistemological assumptions at their roots. In general, the literature review is organized around discussion of perspectives, with Positivist perspectives discussed first, Pragmatic perspectives discussed next, and Post-Modernist perspectives discussed at the end.

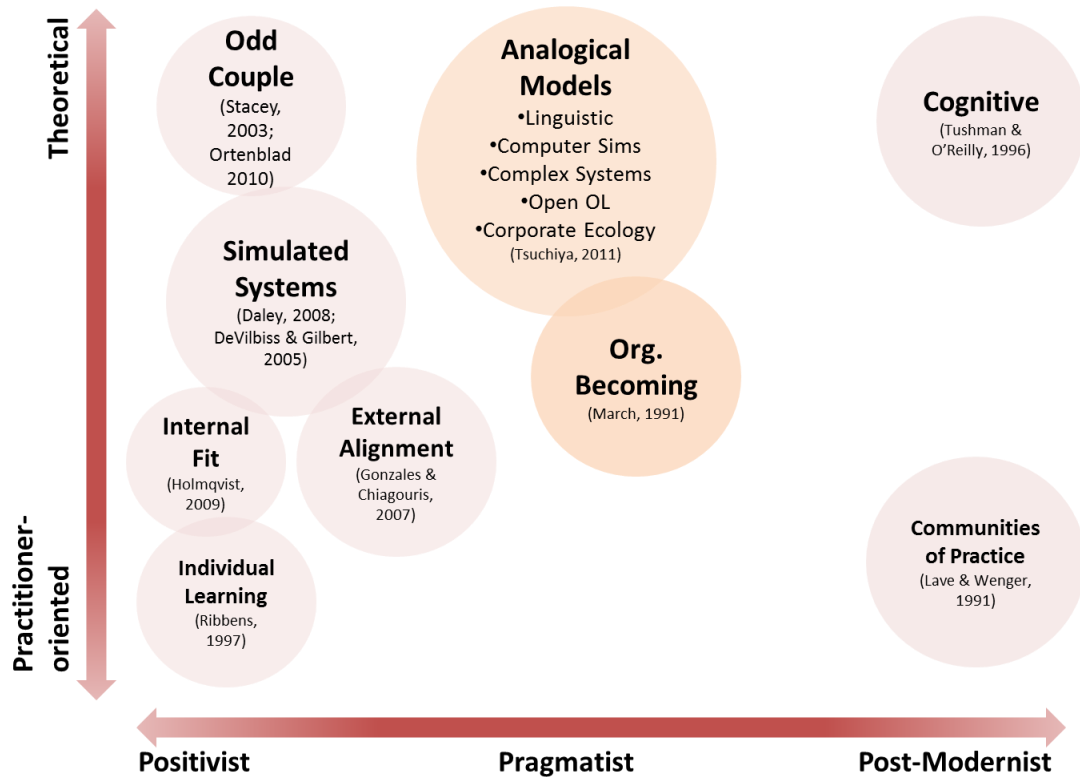


Figure 1. Perspectives on learning organizations and organizational learning, N=1,368.

Overview of Epistemological Perspectives

To understand the differences between epistemological orientations, it is important to review the differences between the perspectives (Table 1). These epistemological differences serve to frame the bounds of logic and provide internal consistency for given perspectives. Each of these epistemologies is broad, and may be more specifically applied to the organizational learning literature.

Table 1. Differences between epistemological orientations.

Positivism	Pragmatism	Post-Modernism
Non-overlapping; cannot be described by another theory	Concern for wholeness	Categories and research theories may significantly overlap
Parsimonious, often expressed in quantitative terms	Attempts to balance parsimony with richness, sometimes through the use of mixed methods	Thick, rich description, usually expressed in qualitative terms
Looks at discrete units such as individuals	Looks at interconnections <i>between</i> units as the unit of interest	Looks as <i>groups</i> as the unit of interest
Deductive logic	Abductive logic	Inductive logic
Interested in external goods-- that is goods which enable the achievement of other goods (i.e., money and other factors)	Interested in a balance of internal and external goods	Interested in internal goods-- that is, goods which are worthwhile in themselves (i.e., helping the community)
Reality and research is assumed to be objective and free from personal biases	Reality is assumed to be both objective and subjective-- namely that there is believed to be an objective reality, which is mediated by personal experience and frames. Research attempts to reflect this position.	Reality is assumed to be constructed, or created for the individual; there is no reality "out there" to be experienced-- therefore research attempts to capture the idiosyncrasy of the constructed environment
Ethical interest in <i>ends</i>	Ethical interest in <i>means</i> and <i>ends</i>	Ethical interest in <i>means</i>
Functions by reducing complexity	Approaches complexity by trying to balance the processes of reduction and absorption	Functions by absorbing complexity

Review of Positivist Perspectives

The Positivist perspective is an epistemological lens through which the world may be viewed. As such, this lens may be understood to include a *range* of perspectives on *organizational learning*, which are represented by particular research topics with slightly different foci.

In general, Positivism is:

- Discrete and cannot be described by another theory (Brookfield, 1992) and parsimonious (Boisot & McKelvey, 2010); tends to look at discrete individual units such as individuals
- Relies on deductive logic (Browaeys & Baets, 2003)
- Interested in external goods (Halliday & Johnsson, 2010) and outcomes
- Assumed to be objective and free from personal biases (Guba, 1990)
- Functions by *reducing* complexity (Boisot & McKelvey, 2010)
- Values knowledge based on its correspondence to external reality (Miller & Lin, 2010)

Positivism: Individual-level learning perspective.

A particular strand of *organizational learning* research projects individual level workplace learning behaviors on to the organization (Gunawardena, Linder-VanBerscht, LaPointe, & Rao, 2010). For example, Ribbens (1997) directly applied Meyers Briggs Type Indicator (MBTI) categories to the organizational level. Likewise Shaw and Perkin (1992)'s model of organizational learning appeared to exhibit a high degree of similarity with Kolb (1984)'s model of how individuals learn from experience (Friedman, Lipshitz, & Popper, 2005).

Human capital researchers assume that organizations are reducible to the human capital of which they are composed, and therefore, human capital metrics are sufficient to

capture organizational outputs. Human capital research tends to view organizational change as a planned and sequential process, with change sometimes imagined as a singular, one-time event (Nonaka, Byosiere, Borucki, & Konno, 1994; Simonin, 1997, 1999). Outcomes are frequently measured in terms of financial or other hard quantitative indicators such as productivity (i.e., number of widgets produced), or validated measures (Song & Kolb, 2009) of turnover intention, job satisfaction, and organization commitment (Davis & Daley, 2008; Dirani, 2009; Egan, Yang, & Bartlett, 2004; Jyothibabu, Farooq, & Pradhan, 2011; Massingham & Diamant, 2009). These models typically rely on measures of a single “ultimate” outcome (Steers, 1975).

Positivism: Odd couple perspective of knowledge management.

Positivism encompasses what Ortenblad (2010) called the *Odd Couple* perspective. This strand of research questions whether organizational learning is an oxymoron. Weick and Westley (1996) claimed that *organization* and *learning* are *antithetical processes* since learning may be viewed a sort of *creative destruction* (Schumpeter, 1947) that resists attempts to reduce and to organize. In particular, *double-loop learning*, that type of learning which is reflective and destroys preconceived categories (Argyris & Schon, 1978), may drive against attempts to organize.

Alvesson and Karreman (2001) argued that the terms *knowledge* and *management* were incompatible since management, being about structure and control, cannot deal with knowledge, which is an abstract phenomenon. This issue may be viewed at a practical level, where managers may be able to see the presence of knowledge workers on the job and clock their hours, but are entirely incapable of seeing if knowledge is really being created. Since managers are not subject-matter experts, but are located far from the

problem being solved, they may have a particular difficulty differentiating a high-quality, innovative solution from a lower-quality one (Drucker, 1999). It is entirely possible that a knowledge worker may *hold back* an innovative solution rather than offering it to the work group. Given these features of knowledge work, it is questionable to what extent knowledge can be said to be *managed*.

Positivism: External Alignment perspectives of organizational learning.

Many scholars have argued for the need to align organizational learning to fit the context of the competitive environment. The perspective is rooted in the resource-based view, where it is believed that organizations require resources from their competitive environment in order to survive over the long-term.

Argyris (1982) suggested that every development initiative, marking the progress of an organization, requires new learning to take place in order to succeed (Argyris, 1982). Likewise, Reg Revans suggested that an organization's rate of learning should be equal to, or greater than, the rate of change in their environment ($L \geq \Delta C$) (Garratt, 2000). Garratt read Revans' equation to imply that if learning is significantly greater than the rate of environmental change, it may in fact be a waste of organizational resources (Garratt, 2000). By this definition, if two companies in a given competitive market niche engage in learning, and one company learns as much as possible, while the other company learns the minimum required to keep ahead of the rate of environmental change, the company that learns the least is believed to be making the best marginal use of its resources.

Chermack (2003) suggested that methods such as strategic planning, open systems planning, strategic change, and trans-organizational development models were

developed in order to help organizations better fit their *external* environment. Spender (1992) traced the roots of strategic models emphasizing fit and alignment back to rational economic models. It has been suggested that balanced scorecards and McKinsey 7S models have also been used as tools for aligning organizational focus (Kaplan, 2005).

Marketing models have also been adapted to *organizational learning*, and assume that the more closely that an organization's learning fits its environment, the better an organization's performance will be (Gonzales & Chiagouris, 2007). There are two dominant market orientation models. One, Kohli and Jaworski (1990)'s market orientation model relates the organization-wide generation of market intelligence, its dissemination across functional areas, and the organization-wide response to the market orientation. This implies that an organization can become more market-oriented through centralized corporate directives. Kohli and Jaworski's model has primarily been tested in US markets (Grey, Sheelagh, Boshoff, & Matheson, 1998).

Two, Narver and Slater (1990)'s operationalized *market orientation* model is comprised of three behavioral components: one, customer orientation, two, competitor orientation, three, inter-functional coordination, and two decision criteria: long-term focus and profitability. Narver and Slater's model has been validated primarily in nations outside of the US (Grey, Sheelagh, Boshoff, & Matheson, 1998).

Positivism: Internal Fit.

A variation on the *fit* perspective is the *levels of analysis* perspective, which imagines a learning organization as being *internally* aligned at the micro, meso, and macro levels. The *Levels of Analysis* perspective views the *learning organization* as requiring the organization to take responsibility for fostering continuous learning in

individuals, formally organizing individual experiential learning processes (Homlqvist, 2009; Park & Rothwell, 2009), in a sense centrally controlling the learning. It is assumed that there should be continuous learning at each level—individual, team, and organizational—of organizational learning (Brown & Duguid, 1991; Park & Rothwell, 2009) and that there is a level of learning which optimally fits and aligns with organizational goals.

Positivism: Simulated-systems perspective.

Although the Simulated-Systems perspective uses terminologies such as *systems thinking* and *team learning* which appear at first glance to be part of the Pragmatic approach, it pursues this research in a largely Positivistic manner—searching for *discrete units*, and displaying concern for *collinearity* (Sta. Maria & Watkins, 2003). This significantly contributes to confusion both as to what is meant by *systems research* overall, and what is meant by the term *learning organization*. Such scholars were likely induced to take such an approach due to lack of critical understanding of systems theory, or failure to distinguish the mid-range pragmatic approach to which systems theory rightly belongs (Jayanti, 2011b) from the more prevalent Positivistic approach of viewing phenomena in terms of discrete units (Jayanti, 2011a).

One prevalent version of the simulated-systems approach is found in the dominant Senge school (Blackman & Henderson, 2005; Ford, Voyer, & Wilkinson, 2000; Mets & Torokoff, 2007), which uses discrete, fragmented units to describe the process of organizational becoming. In this perspective, there are five disciplines of the learning organization: *personal mastery*, which involves the process of clarifying goals, prioritizing (DeVilbiss & Gilbert, 2005), and "seeing reality objectively" (Ng, 2004)—if

such a thing is in fact possible; surfacing *mental models* that influence how an individual understand the world and how he or she takes action; building a *shared vision* of the future; *team learning*, since teams are a "fundamental unit" (Ng, 2004) in organizations; and *systems thinking*, or a body of knowledge and tools that enable people to manage complexity and view the interaction between parts, and interrelationships, rather than cause-effect chains (Senge, 1990).

Although Sta. Maria and Watkins (2003) did not explicitly name Senge as a major influence on their work, they took a similar approach, guiding their research on the concerns-based adoption model of Hall and Hord (1987), which identified seven stages of concern with innovation in a Likert-style manner. Likewise, Watkins and Marsick's dimensions of learning organization questionnaire (DLOQ) was concerned with creating *discrete units* to indicate learning organizations (Marsick & Watkins, 2003). Many of the discrete categories of the DLOQ appear to overlap with Senge's categories—i.e., *team learning* (Senge, 1990), *dialogue and inquiry* (Sta. Maria & Watkins, 2003) versus *shared vision* (Senge, 1990), *systems connections* (Sta. Maria & Watkins, 2003) versus *systems thinking* (Senge, 1990), *empowerment* (Sta. Maria & Watkins, 2003) versus *personal mastery* (Senge, 1990) (Table 2).

Overall, it has been suggested that Pedler, Burgoyne, and Boyndell (1996)'s eleven learning company characteristics are similar to Senge (1990)'s five disciplines (Symon, 2002). Arguably, Marsick & Watkins' (2003) seven dimensions of learning are also of a similar vein.

Table 2. Comparison of various discrete categories of simulated-systems models.

<i>Senge's 5 disciplines (1990)</i>	<i>Pedler, Burgoyne, & Boyndell (1996)'s 11 learning company characteristics (1996)</i>	<i>Watkins and Marsick's 7 dimensions of the learning organization (1993; 1996; Sta. Maria & Watkins, 2003)</i>
personal mastery	a learning approach	empower people
mental models	participative policy making	inquiry and dialogue
building shared visions	informating	provide strategic leadership for learning
team learning	inter-company learning	team learning
systems thinking	formative accounting and control	systems connections
	internal exchange	embedded systems
	reward flexibility	continuous learning
	enabling structures	
	boundary workers as environmental scanners	
	learning climate	
	self-development opportunities for all	

Review of Pragmatic Perspectives

The Pragmatic epistemological lens may be viewed to include the Learning Perspective, the Organizational Becoming Perspective, the Corporate Ecology Perspective, and the Analogical Perspective.

In general, Pragmatism is marked by:

- Abductive logic (Haig, 2008)
- Concern for dynamic wholeness; *interconnections* between units are the *unit of interest* rather than the discrete units themselves (Garrido, 2009; Ng, 2004; Ortenblad, 2010)
- Dual focus on both the *means* and *ends* (McKelvey, 2004)
- Interest in connection between internal and external *good* (Halliday & Johnsson, 2010)
- Values knowledge that has been demonstrated through successful action in specific situations (Miller & Lin, 2010)

Pragmatism: Organizational becoming perspective.

In the *Organizational Becoming* perspective, organizations are viewed as a *process*, where organizations are represented as being in a state of constant flux, never reaching a state of equilibrium. It is recognized that organizations are a part of complex systems, over which they cannot exert control (Roper & Pettit, 2002).

In this view, a learning organization is characterized as an environment where synergy is created, developed, and nurtured based on collective actions and common interpretation (Hutchins, 1991; Love, Huang, Edwards, & Irani, 2004; Weick & Roberts, 1993). One type of learning (i.e., single loop or double loop) (Argyris & Schon, 1978) is not preferred over another (Love et al, 2004), but each is considered essential at different times; as such, the type of learning required may be dependent upon the individual task as well as the environmental demands (Miner & Mezias, 1996).

This *process* orientation sometimes finds expression in terms of *process improvement* and Total Quality Management (TQM) headings. Scholars have suggested that *organizational learning* and *TQM* are similar, in that both draw on liberation management from the 1960s and 70s with its attendant notions of participation and decentralization (Fry & Griswold, 2003), focus on continuous improvement (Love, Li, Irani, & Faniran, 2000), use general systems theory for their theoretical framework (Wang, 2004), and are mutually complementary processes which may be dynamic, interacting, and transformational (Ferguson-Amores, Garcia-Rodriguez, & Ruiz-Navarro, 2005), although TQM focuses on *where* to go and *what* to do, while the *learning organization* construct focuses on *how* and *why* to master (Chang & Sun, 2007).

Some scholars see the engagement in *process improvement* as a contributor to *organizational renewal* (March, 1991), in which companies change themselves as a necessary condition of survival (deGeus, 1997), going beyond approaches of cost efficiency to seek flexibility, creativity, innovation, customer satisfaction, and exploitation of information technologies to generate rapid responses to complex changes, pursuing an orientation toward the long-term mission of the company (Ferguson-Amores, Garcia-Rodriguez, & Ruiz-Navarro, 2005).

Pragmatism: Analogical perspectives.

Analogical models rely upon metaphors and analogies in order to expand the definition and increase comprehension of a construct concept (Chan, Cooper, & Tortopoulos, 2005). "Metaphors are integral to the way we act, interact, and think about the world" (Audebrand, 2010, p.413). These metaphors may either be explicit, or less self-aware. It has been argued that "all knowledge is either tacit or rooted in tacit knowledge, it can only be expressed and transferred indirectly by means of metaphor or language in a broad sense" (Tsuchiya, 2011, p.386). Analogies and metaphors have long been used to elucidate the understanding of new concepts, which may stand outside of currently known categories. Gilstrap (2010) traced the analogical school back to Epicurus, who wrote, "We should investigate the causes of all celestial and non-perceptible phenomena by making a comparison of these with the various ways in which an analogous phenomenon takes place in our own experience" (Epicurus, 1963, p.44). Gavetti and Rivkin (2005) described analogical reasoning as a process through which a person faced with an unfamiliar problem or opportunity thinks back to a similar situation they have seen or heard about, draw lessons from it, and apply these lessons to the current

situation (p.54). Arguably, analogies are not always verbal or linguistic in nature, but may take the form of computer simulations or *microworlds* which serve as analogies for the larger, real world, complex systems models (Miller & Lin, 2010; Tsuchiya, 2011; Woodside, 2006), and implicit analogies between computers and corporations or ecology and corporations .

Pragmatism: Analogical perspective-linguistic analogical models.

Linguistic analogical models are perhaps the simplest form of analogical models, and what people think of first when they consider the term *analogy*. There are several linguistic metaphors and analogies in currency. One strand of research on *organizational learning* uses the metaphor of *organizational memory* (Moorman & Miner, 1998; Walsh & Ungson, 1991) and posits that an organization should have a stock of knowledge that can be put to use to improve the production process or any supporting task (Ebbers & Wijnberg, 2009). It is argued that knowledge, particularly procedural, represents a firm's resource (Kogut & Zander, 1992; Nonaka, 1991) and that competitive differences between organizations are the result of differences in creating, retaining, and transferring knowledge resources (Ebbers & Wijnberg, 2009). As such, this analogical model appears to fit well both with the resource-based view of knowledge and models of knowledge management.

Argyris (1999) used the image of a thermostat, possibly borrowed from cybernetics or electrical engineering, to explain the idea of *single loop learning*. While a thermostat can detect whether it is too cold or too hot, and is programmed to turn itself off or on in order to correct the situation, it cannot question why it was programmed at 72

degrees. If a thermostat were able to question why things were done the way they were it would be a *double loop learner*.

Ciuk and Kostera (2010) borrowed the image of the waters of Lethe to serve as an archetype for organizational forgetting, which they understood as the obverse of the organizational learning process. In Greek mythology, Lethe was the deity of forgetfulness. Like the dead passing through the waters to the underworld, people in organizations that are engaged in the process of forgetting, may lose values and their very identity.

Tosey (2005) used Lewis Carroll's poem, "The hunting of the snark" as a metaphor for hunting for the learning organization. He suggested that the learning organization is like the snark in that there is little hard evidence for it, it is regarded as universally beneficial yet may have a shadow side, and its paradox is essential to its nature—for instance, in the pursuit of *learning how to learn*, organizations may miss the necessity of learning *not* to learn.

Weick (1998), Passmore (1998), Crossan (1998), and Ford (2008) borrowed the concept of improvisation from jazz and theatrical improvisation, and suggested that companies encountering turbulence and dramatic change in the competitive environment need to improvise solutions when engaging in organizational learning. Just as a group of jazz musicians each has his or her own part to play, but each part must work in concert with the larger whole, each employee in an organization must riff on the larger organizational theme or vision.

Cangelosi and Dill (1961), Cyert and March (1992), Huber (1991), March and Simon (1993), and Newell and Simon (1972) used the metaphor of computer-like

activities of *information processing* to describe organizational learning in terms of search, input, transformation, storage, and output (Simpson & Marshall, 2010). Further, individuals may be seen to interact with an organization's code, which may be understood as being similar to computer code. An organization's code is informed by the organization's top performers and represents an organization's language beliefs, and practices; other members of the organization, in turn, learn from the code (Fang, Lee, & Melissa, 2010; March, 1991). Because the information processing of computers is relatively understood, whereas the construct of organizational learning may be less understood, the metaphor between a computer's information processing and an organization's learning may serve as a schema for organizing and understanding the new information. Miller and Lin (2010) argued that this metaphor may be limited, since it views only codified knowledge, and ignores knowledge that has a tacit dimension and is transferred through interpersonal and experiential means.

Audebrand (2010) suggested that organizational learning constructs involving organizational sustainability involve drawing comparisons between organizational and ecological constructs, and may be viewed as an analogical construct. While the organizational sustainability model is increasing in popularity (Espinoza & Porter, 2011; Rosner, 1995), Audebrand argued that it would not remain a lasting trend and unseat previous analogical models of business as war if more cohesive and intriguing metaphors for business and management are not established. Audebrand (2010) suggested that mere disconfirmation is not enough to dislodge a social paradigm; instead, this can only be achieved with a better or more convincing alternative, and that metaphors and analogies

represent one major way of unseating previous paradigms. Tsoukas (1993) argued that the most popular metaphors tend to reflect the dominant ideas and biases of a social era.

More broadly, Garud, Dunbar, and Bartel (2010) proposed the *narrative form* itself as a type of analogical model (that is, the entire format of storytelling rather than single metaphors within a narrative), and argued that the narrative is an ideal form, because storytelling can preserve the contextual details of a learned organizational lesson, while expanding over different scenarios and situations in its reuse.

Pragmatism: Analogical perspective-computer simulation models.

One strand of *analogical* research involves the creation of computer simulation models or microworlds (Woodside, 2006) to facilitate understandings across incompatible interpretive frameworks (Tsuchiya, 2011). It is assumed that where information is tacit or rooted in tacit knowledge, it can only be expressed through a metaphor (Tsuchiya, 2011). These simulations serve as a metaphor to be directly experienced and shared. For example, Tsuchiya (2011) constructed computer simulation models for learners within an organization to experience concepts firsthand, so that learners would have some shared mental models, which could be used as a common ground starting point to begin conversations and broader organizational learning.

Pragmatism: Analogical Perspective-complex systems analogical models.

Systems models create a model of how the world is supposed to work, as a means of analogy for how the complex real world functions. Complex systems are defined as those in which agents, elements, and subsystems interact within densely connected networks (Espinosa & Porter, 2011), and agents are unable to entirely control their

internal processes due to the external events (Cyphert & Saiia, 2004). Because the components of complex systems are interacting, the *interaction* is the unit of interest, rather than discrete units (Jayanti, 2011b). Much of complex systems research is based on Lewin (1993)'s change model or the foundational work of Gleick (1987), Waldrop (1992), or Kauffman (1995) (Cyphert & Saiia, 2004). Systems models range from logical/philosophical systems models, to computer-based systems models, to mathematical models.

There exists a plurality of models that deal with complex systems. Some strands of the Complexity research models such as Complex Adaptive Systems (CAS) and Viable Systems Model (VSM) are also frequently linked to sustainability (Espinosa & Porter, 2011). The CAS model is derived from the ecological sciences (Espinosa & Porter, 2011). Complex systems models include related analogies and metaphors such as fitness landscapes, simulated annealing, local maxima, patches, generative relationships, and fractal organization (Mesjasz, 2002).

Pragmatism: Analogical perspective-open organizational learning.

One cluster of analogical research makes an implicit analogy between open source software development, and projects it onto the larger business landscape as *open innovation* (Gassmann, Enkel, & Chesbrough, 2010). This research examines the impacts of collaborative external work sites such as networked or virtual companies (Bednar & Godkin, 2009), industry alliances (Lee, Liang, & Liu, 2010), university-industry alliances (Perkmann, Neely, & Walsh, 2011), outsourcing (Zirpoli & Becker, 2011), and *crowdsourcing* (Ebner, Leimeister, & Krcmar, 2009) on organizational learning and innovation.

This cluster of research expands the unit of interest away from any of the single levels of analysis that are commonly used to describe organizational learning (i.e., the individual, team, or organizational levels). Instead, this research focuses on the inter-firm level as its unit of analysis (See Figure 2).

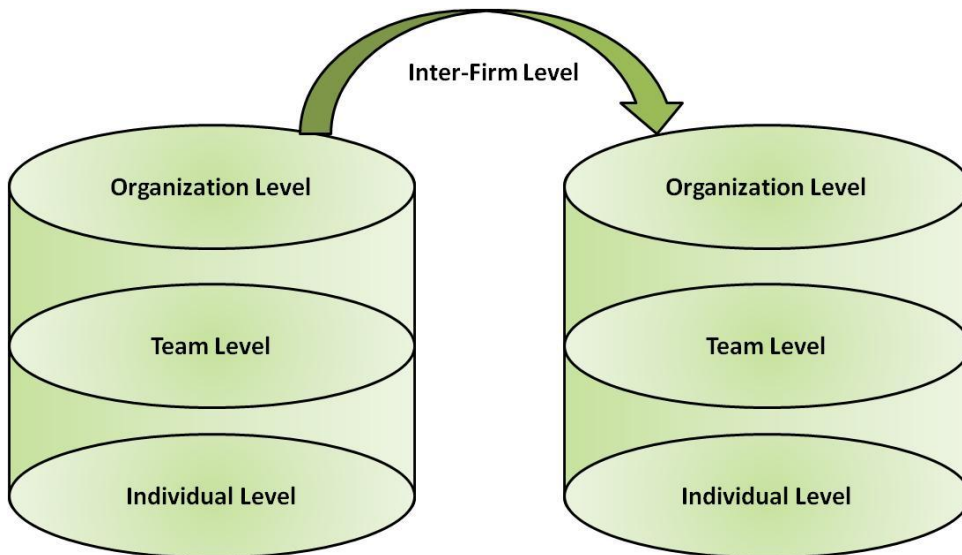


Figure 2. Interfirm level of analysis.

This strand of research may be further distinguished by the fact that it often describes the concept of building an organization's *absorptive capacity* (Cohen & Levinthal, 1990; Lewin, Massini, & Peters, 2011), or "dynamic capability that influences the firm's ability to create and deploy the knowledge necessary to build other organizational capabilities, such as organizational learning and organizational innovation, which give the firm a foundation on which to build a competitive advantage that yields superior performance" (Garcia-Morales, Ruiz-Moreno, & Llorens-Montes, 2007, p. 528). To expand an organization's *absorptive capacity*, it is believed that *external* sourcing of information must be conducted, as well as complimentary *internal* organizational learning (Garcia-Morales, Ruiz-Moreno, & Llorens-Montes, 2007). It has been suggested that firms may acquire *path dependence*, since firms that build their *absorptive*

capacity may be better able to acquire and utilize external knowledge (Garcia-Morales, Ruiz-Moreno, & Llorens-Montes, 2007; Nystrom & Starbuck, 1984).

Pragmatism: Analogical perspective-corporate ecology.

The corporate ecology perspective makes an implicit analogy between ecology models and corporations and suggests that an organization is defined by its relationships, rather than by discrete, decontextualized components of that environment (Cyphert & Saiia, 2004) and that these relationships are embedded, such that the boundaries between the organism and its environment are so complex and interactive that the boundaries between one and the other begin to mingle (Golley, 1998). Smith and Saint-Onge (1996) called this the evolutionary organization (EVO). As such, the dialectic between individual organization and competitive environment does not follow a relationship based on Positivistic linear causality ($A \rightarrow B$), but becomes complex, interacting, and emergent. Hamel and Prahalad (2002) reflected the neo-Darwinian biological analogy in describing the new competitive environment as *more complex* than that of the past and requiring *greater genetic variety*.

Review of Post-modernist Perspectives

The Post-modernist perspective may be viewed as encompassing the Cognitive Perspective and the Communities of Practice Perspective of the Learning Organization.

In general, Post-modernism is marked by:

- Inductive logic (Suddaby, 2006)
- Thick description (Charmaz, 2006; Lincoln & Lynham, 2011) answering *what* and *how* questions about the situation (Rescher, 2000)
- Close focus on *groups* rather than *individuals* within a specific, contextualized situation

- Interest in internal *good* (Halliday & Johnsson, 2010)
- Value for knowledge beliefs based on other beliefs, which make no claim to represent reality (Miller & Lin, 2010)

Post-modernism: Cognitive perspective.

The Cognitive perspective views organizational change as an iterative process, including managerial cognition as an important antecedent to change, and makes a distinction between evolutionary and transformational change (Sackmann, Eggenhofer-Rehart, & Friesl, 2009). Tushman and O'Reilly (1996) argued that while fit or alignment of strategy, structure, and culture was important for organizations in the short-run, this represented the world of *evolutionary change*. But for sustained success, in the long-run, managers may need to destroy the alignment that made their organizations successful, to create *revolutionary change*. Some have referred to an organization's need to *destroy alignment* as a need for *agility* (Jamali, Khoury, & Sahyoun, 2006; Joiner & Josephs, 2007; McCann, Selsky, & Lee, 2009). This idea is similar to Argyris (1978)'s assertion that learning can be classified into two categories: *single loop*, or incremental evolutionary change, and *double loop*, or revolutionary change. Tushman and O'Reilly (1996) noted examples of organizations that had done well, but became trapped by their success in continuing to pursue previously successful ways of doing things, and suggested that these organizations had continued to pursue *evolutionary*, rather than *revolutionary*, change when more drastic changes were demanded by the environment.

Holmqvist (2009) suggested that organizational learning should be viewed as a balance of the learning processes of *exploration* and *exploitation* (Holland, 1975; March, 1991) and posited that if organizations learn through inter-organizational collaborations,

their lack of control over the learning process may cause them to have more time to reflect on their operations, helping them to learn more broadly, and reducing their tendency to use a dominant behavior of either exploration or exploitation. Some have called this balance *ambidextrous learning* (Tushman & O'Reilly, 1996; Wei, Yi, & Yuan, 2011).

Post-modernism: Communities of practice perspective.

The Communities of Practice (COP) view (Choi, 2006; Lave & Wenger, 1991) falls in the Post-modernist orientation (Halliday & Johnsson, 2010). In the COP view, learning organizations are characterized by free exchange across communities of practice, networked knowledge and experience, continual improvement, learning leadership, open dialogue, continual transformation, and protean psychological contracts (Snell, 2001). Nonaka (1991) suggested that information should be freely available within an organization in order for free exchange to take place, since when information differentials exist, members no longer interact on equal terms, and this may hinder the search for different interpretations.

The COP perspective is characterized by a rejection of older, operant conditioning models of learning which focus on stimulus-response behaviors (e.g., a person works-is paid; works hard-is praised), and instead focus on principles of learning based on social learning theory (Davis & Luthans, 1980; Sligo, 1996). Meanings are symbolic; as they are co-created and shared individuals develop common understandings (Brownell, 2008) which facilitate the sharing of expertise and increase contributions while continuous production of online documents builds an organizational knowledge base (El Sawy & Bowles, 1997). Over time, the alignment of understandings and expectations expands so

that a shared culture develops, which serves as a framework for interpreting new and unfamiliar events (Brownell, 2008; Schein, 1996). Experts socialize novices into local understandings through *legitimate peripheral participation* (Lave & Wenger, 1991) where novices learn through apprenticeship, observing experts, and completing tasks that are *scaffolded* in terms of increasing difficulty. Action learning may be one approach to driving learning in a COP (Argote, 1999).

Driver (2002) cautioned that communities of learners may have negative, as well as positive consequences for those involved in the community. First, shared values may serve as internalized controls that serve as a much stronger and more effective control system than would be possible in a traditional organization (Driver, 2002). Second, because the learning organization is a tight-knit community, it may foster a single dominant view of the world, excluding diverse perspectives (Rifkin & Fulop, 1997). Third, some have suggested that members of learning organizations may engage in very little new learning because such learning may be disruptive to the established norms (Hendry, 1996). Fourth, because norms and learning content have been established by those in power, members of the learning community may not be able to question the validity of the organizational goals or exert alternative choices without risking their own jobs (Schein, 1999). Recognizing the risks, as well as the rewards, of engaging a community of practice can help HRD practitioners ensure that the relationship between members is not an exploitative one. It may be especially important to set expectations for the group to ensure that divergent thinking and questioning is welcomed.

Snell (2001) suggested that in order for a COP to fully function, it would require morality, specifically free exchange, continual engagement in open criticism from

stakeholders, leadership's admission of shortcomings, open dialogue, compassionate actions to prevent material or psychological distress, learning support for employees who encounter difficulties in avoiding obsolescence, and collaborative learning relationships between the organization and individual employees on critical trust and transparent decision-making. Owenby (2002) took a COP perspective, and suggested that the *learning organization* construct could consist of one of four possible classifications. These included the *liberal learning network* which involves self-directed learning in a mostly unstructured fashion, a *vertical learning network*, where managers and HRD staff linearly plan employee learning activities around development and implementation of a new policy, process, goal, or procedure; the *horizontal learning network*, where a community of learners attempts to solve a complex problem by reflecting on experiences, and the *external learning network*, where professionals learn from action theories developed outside of the organization, such as professional associations. These classifications of learning networks may not be independent as Owenby (2002) seemed to argue, whereby only one mode can exist at a time, but rather, several may exist simultaneously in a given environment.

Summary

This chapter presented an overview of 1,368 journal articles that dealt broadly with the topic of *organizational learning*. The differences between the epistemological approaches were described first from a theoretical perspective, and subsequently contextualized in terms of how the epistemological perspective has been applied in the *organizational learning* literature. The *Positivist epistemological perspective* appears in the *organizational learning* literature in terms of five strands: the individual level

learning perspective, the odd couple perspective, the external fit and alignment perspective, the internal fit and alignment perspective, and the simulated systems perspective.

The *individual-level learning* perspective reduces organizational learning processes into simpler and better-understood individual-level learning processes, estimating organizational outcomes on the basis of the sum total of calculated individual outputs, ignoring synergies or external conditions. The *odd couple* perspective views knowledge and management and organization and learning as antithetical processes, which represent a sort of creative destruction. The *external alignment* perspective imagines organizational learning as a sort of puzzle, with interlocking pieces to be put together and organized in the framing environment in a single "right" way. The *internal fit* perspective similarly imagines the need for alignment, but shifts its focus to inside the company. The *simulated systems* perspective uses the terms of systems theory, but pursues this research in a positivistic manner, searching for discrete units, displaying concern for *collinearity*, and building superficial models which often lack *operationalizability*.

The *Pragmatic* epistemology is represented in the *organizational learning and learning organizations* literature in terms of two strands: the *organizational becoming* perspective and a cluster of *analogical* perspectives. The *organizational becoming* perspective views organizations as being in a state of flux. The learning organization is characterized as an environment where synergy is created, developed, and nurtured based on common interpretations. The *organizational becoming* perspective is process focused

and comes under a number of labels including reengineering, Total Quality Management (TQM), and liberation management among others.

Analogical perspectives come in five types: linguistic analogies, computer simulations, complex systems metaphors, open organizational learning, and corporate ecology. Each of these relies on a metaphor--whether explicit, as in the case of linguistic analogies, or implicit, as in the case of open organizational learning which implies a metaphor between open sourced software development and the business world.

The *Post-modernist* epistemology is represented in the organizational learning literature in terms of two major perspectives: the *Cognitive perspective*, which focuses on internal organizational processes related to organizational learning, and the *Communities of Practice (COP)* perspective which concentrates on how groups induct novices into workplace culture. The COP view focuses on leveling information differentials, so that team members can interact on equal terms, and engage in free exchange of information, and open dialogue.

While the literature on *organizational learning* has frequently been criticized for its lack of coherence, or even its self-contradictory nature (Heraty & Morley, 2008; Ortenblad, 2005), by organizing the literature in terms of identifying which epistemological camp a particular article belongs in, greater clarity and insight is made possible. What is perceived to be true for those who situate themselves within the intellectual framework of a particular epistemological perspective does not necessarily hold to be true for others located in different epistemic communities. Therefore, many of the apparent differences in opinions related to organizational learning may be traced back to epistemic differences in the producers of the research. In short, the *way* that

researchers see often shapes *what* they see. While this tendency is likely to be true of other topics, it is most evident when looking at *organizational learning* literature, because this research is a relatively mature topic, which has been explored by many researchers, who often think and approach research in dramatically different ways. Strands of literature where this tendency is less pronounced may simply involve topics which have been investigated less, or bodies of literature in which a particular epistemic perspective has come to dominate through political or other means.

After reviewing the literature, it appears that current LO/OL models reflect a general overemphasis on the verification of theory and a resultant de-emphasis on the prior step of discovering relevant concepts and hypotheses for researching organizational learning. In the rush to verify and validate practical organizational learning instruments, major issues with the instrumentation, and even more fundamentally, the underlying theoretical models upon which they were based, were overlooked. This implies the need to take a step back and develop a theory from organizational data.

Theoretical Bases

"There is nothing so practical as a good theory." –Kurt Lewin

Drawing on the literature review, nine theoretical models were identified which serve to form the framework to bound and limit the research considered relevant for this study: organizational learning, bounded rationality, schema theory, anchoring, social cognition theory, epistemology, semiotics, social identity theory, and symbolic interactionism (Figure 3). Because these theories are complimentary, and at times overlapping, in their domains of interest, it is believed that this combination is a good fit.

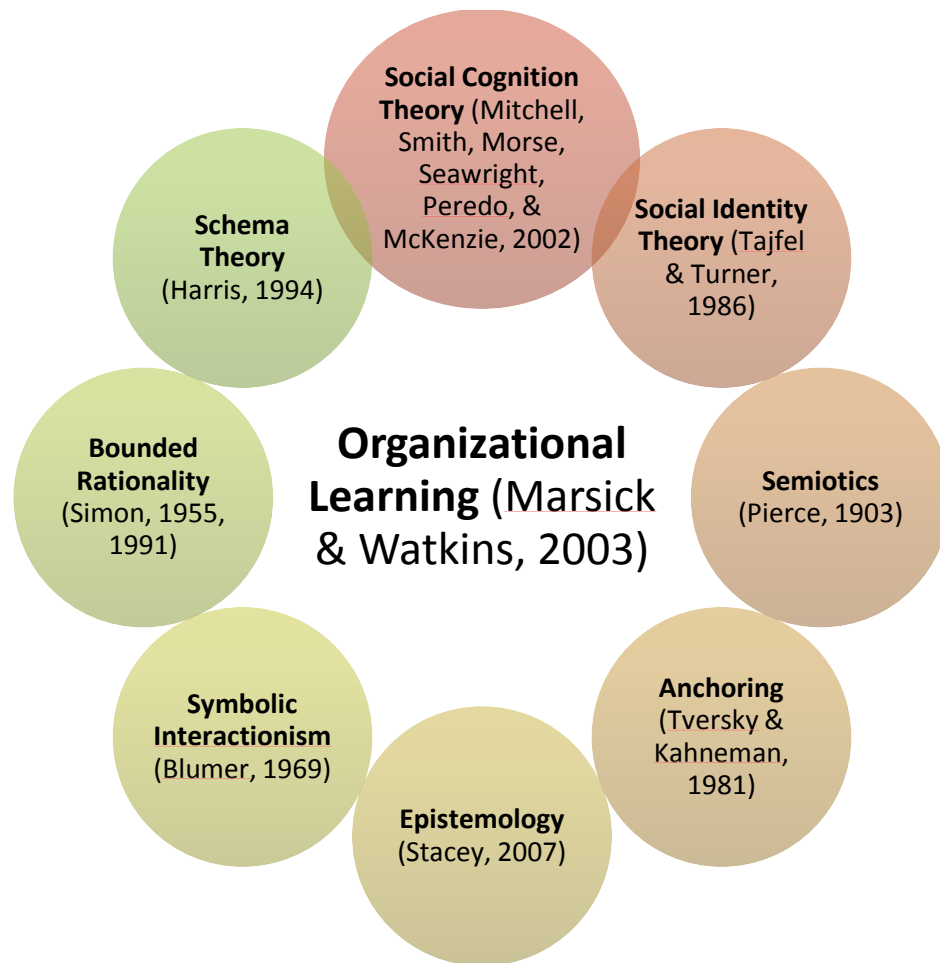


Figure 3. Theoretical models undergirding the proposed study.

First, this proposed study is based on the theory of *organizational learning* and *learning organizations* (constructs which are currently fairly well-delineated, but which did not bifurcate into independent strands of research until the mid-1990s). While there is some debate as to whether learning can properly be classified as an organizational-level construct, this proposed study assumes that organizations can and do engage in learning, and that learning is not limited to individual-level constructions of learning (Argyris, 1993; Argyris & Schon, 1978; Brown & Duguid, 1991; Fiol & Lyles, 1985; Miner & Mezas, 1996). It has been suggested that the ways in which organizations learn,

preserve, and transmit knowledge may be different from the ways individuals engage in learning, since knowledge must not only be collectively created, but also connected to the existing organizational knowledge system (Nonaka, Krough, & Voelpel, 2006). Learning may involve an organization's interpreting its environment and responding to it (Daft & Weick, 1984), a flow of messages (Nonaka, 1994), or knowledge acquisition, distribution, interpretation, and organizational memory (Tseng & McLean, 2008), more specifically knowledge distribution involving the expansion of both tacit and explicit knowledge (Liao, 2008). Organizational memory is significant, since if it were not for organizational memory learning would have a relatively short *half-life* because of personnel turnover and the passage of time (Levitt & March 1988; Sinkula, 1994).

Second, this research draws on the well-established construct of *bounded rationality*, which highlights the importance of information processing constraints, such as the limited cognitive representations that actors use to form mental models of their environment (Simon, 1955, 1991; Thagard, 1996)—on organizational routines (Cyert & March, 1992; Levinthal & March, 1993; Paap & Katz, 2005; Vasudeva & Anand, 2011), organizational culture (Braganza, Awazu, & DeSouza, 2009), and strategy (Tversky & Kahneman, 1986).

Dubin (1978) attributed *bounded rationality* to deep-seated factors that make us human: We simply are not capable of seeing things whole. Nor is man[kind] capable of retaining and recording complex phenomena coming within the range of his [or her] sensory fields. It is necessary to acknowledge that man[kind] who builds theories to model his [or her] world of observation, has genuine limits on his [or her] capacities to grasp complex observations (p.41)

Bounded rationality suggests that organizational ways of doing things can reinforce learned behavior, filtering out dissenting information (Paap & Katz, 2005; Rerup & Feldman, 2011), and lead to path dependence (Curado, 2006; Levinthal & March, 1993; Vasudeva & Anand, 2011). Garfinkel (1999) suggested that social stability may be established, but that it must be maintained and sustained by those present. These ways of doing things can contribute to *organizational myopia*—where organizations are led to make poor decisions for new environmental conditions due to momentum and failure to think outside of the organization's cognitive "box" (Levinthal & March, 1993; March, 1991; Nystrom & Starbuck, 1984). For example, the story has been recounted of a particular company that excelled at building high-quality typewriters. This company

focused so narrowly on making useful, incremental improvements to their main product that they failed to notice that market demand was shifting towards computers (Nystrom & Starbuck, 1984).

Third, this proposed study draws on *social cognition theory*. *Social cognition theory* suggests that knowledge is structured and that mental models (cognitions) are ordered in such a way as to optimize personal effectiveness within given situations. Social constructions become reality for those who exist in the realm (Forrester, 1961; Weick & Roberts, 1993). When this occurs, other conceptions of reality are not considered, and the possibility of alternative conceptions of reality is not even recognized (Donmoyer, 1990).

A majority of social cognition research focuses on the processes that people use to understand each other (Zaki & Oschner, 2011). Social cognition theory suggests that all knowledge of the empirical world must be filtered through cognitive structures, or schema, which frame and shape what we know. It has been suggested that organizational culture is reflected by the emergence of congruent schemas which shape, and are shaped by, the *sensemaking* process of mental dialogue between self and others (Harris, 1994). In this view, ideas may be understood to exist not at the level of any one individual. Just as thought is not necessarily connected with a brain, but instead appears in the work of bees, and crystals, and throughout the physical world, thought at the organizational level may stand apart from any one individual physical brain, but may be said to properly exist at the social level. Schemas provide a structure for beliefs (Lyles & Schwenk, 1992) and guide the search, acquisition, and processing of information, and may include evaluation

rubrics, social schema, stereotypes, social roles, scripts, worldviews, archetypes, knowledge management systems, and design repositories.

Fourth, this proposed study is based on *schema theory*. Schema theory suggests that the way that information is structured into categories, may provide shortcuts for decision-making (Piaget, 1969). A subset of the schema literature involves *organization schemas*, which serve to explain how the culture of an organization is embodied cognitively in individuals (Harris, 1994). Kenny (2006) suggested that organizations have particular *learning cultures*, influenced by their schema. Bartunek and Moch (1987) suggested that the terms *paradigm* (Knorr-Cetina, 1999; Kuhn, 1970), *frame* (Gardner, 2004; Goffman, 1974; Herriot, Levinthal, & March, 1985; March, 1994), *theory-in-use* (Argyris & Schon, 1978), and *cognitive map* (Bougon, Weick, & Binkhorst, 1977) are sometimes used interchangeably to describe similar constructs. *Organizational schema* may be long-lasting, and the organizational assumptions may continue even as the external competitive conditions have changed (Nystrom & Starbuck, 1984).

Fifth, the theoretical model of this proposed study is based on the concept of *anchoring*. Making an argument similar to Boisot (1999), Tversky, Slovic, and Kahneman (1982) suggested that anchoring can potentially impact decision-making, where different starting points are likely to yield different estimate outcomes. Therefore, it was suggested that by accounting for the different initial starting points of organizations, one could better limit the band of ranges of potential organizational outcomes.

Sixth, this study is undergirded by *social identity theory*, which was a means of moving away from individual level definitions for collective behaviors (Tajfel & Turner,

1986). Social identity theory suggests that there exist different levels of self-identification, and that there are really two types of behavior: behaviors motivated by individuals' acting for themselves on the basis of personal identity, versus behaviors motivated by a shared social identity (Mols & Weber, 2013). Since each individual may simultaneously belong to multiple social groups--for instance, being simultaneously a mother, an employee, a student, and an American--the identity which one uses at a given time is largely influenced by the context in which one finds oneself at a given time. For the purposes of this study, I am most interested in an individual's motivations generated from their workplace role.

Seventh, this proposed study is deeply rooted in the study of *epistemology*, and how what is known is known, in combination with semiotics. In other words, this proposed study applies the Peircean semiotic model of triadic logic to the philosophical problem of *epistemology*, which relates to the acquisition and generation of knowledge.

The discipline of philosophy involves the study of four topics: *politics*, *aesthetics*, *ethics*, and *metaphysics* (Figure 4). *Metaphysics* includes both the study of *epistemology*, or *how we know things*, as well *ontology* and *what things may be said to exist*. Drilling down further, there are several modes of study within the topic of *epistemology*—namely, *empiricism*, or the study of knowledge acquired through experience; *rationalism*, which privileges empirical data but utilizes abstract reasoning; *constructivism*, which views all knowledge as being constructed by humans, and therefore studies the social processes of knowledge development; and *idealism*, which views knowledge as developed through intuition rather than experience, through ideal types. Stacey (2007) collapsed these categories of the branches of epistemology into three

parts, since both rationalism and empiricism rely heavily on the acquisition of knowledge through experience and empirical data (Figure 4). Stacey (2007) called these epistemological modes Positivism, Idealism, and Constructivism.

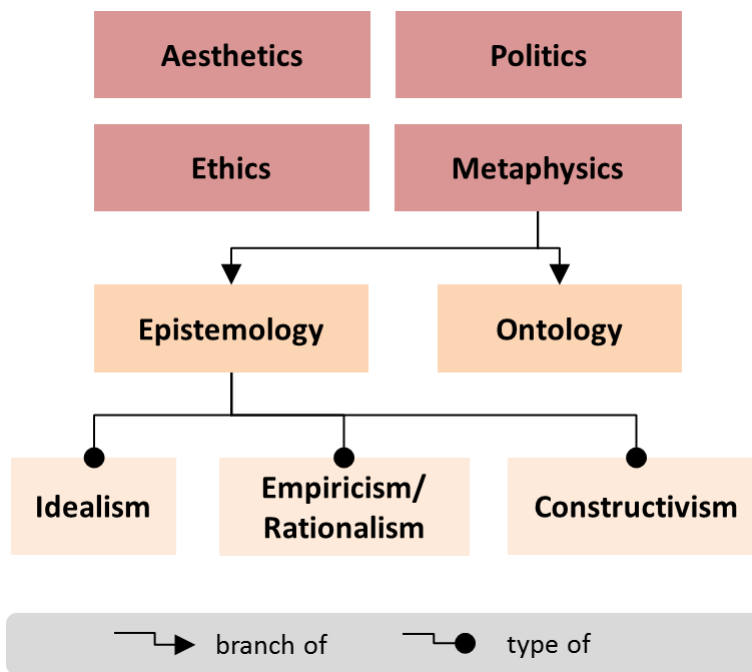


Figure 4. Epistemological modes.

Miller and Lin (2010) referred to the epistemological approaches as *Coherentism*, involving matching knowledge to beliefs, *Pragmatism*, involving the trial of new knowledge in action, and *Conformism*, involving changing previous beliefs to match with surrounding communal beliefs. In a similar vein, Donmoyer (1990) deduced that there are a *limited* number of types of mental models, since it would be wasteful for any society to develop ways of talking that serve no purpose. Jayanti (2011) suggested that these three epistemological modes, or ways of framing organizational cognitions, are in fact the comparatively more visible *outcomes* of three distinct theory building *processes*: deduction, induction, and abduction (Figure 5). The *deductive* reasoning process, which is most closely associated with scientific method, starts with a theory, formulates a

hypothesis, makes an observation of the phenomenon, and either confirms or rejects the hypothesis. The *inductive* reasoning process, which is perhaps most associated with social science research, involves observing a phenomenon--such as how people behave in a workplace setting, developing a hypothesis, building towards a theory, and finally confirming the theory in another setting. The *abductive* reasoning process more flexibly involves both deduction and induction as sub-processes of reasoning. While the abductive reasoning process has been applied variously, one structured way of proceeding is to start with an observation, identify a pattern, generate a tentative finding, build a theory, form a hypothesis, observe whether the hypothesis is reasonable, and confirm or reject it.

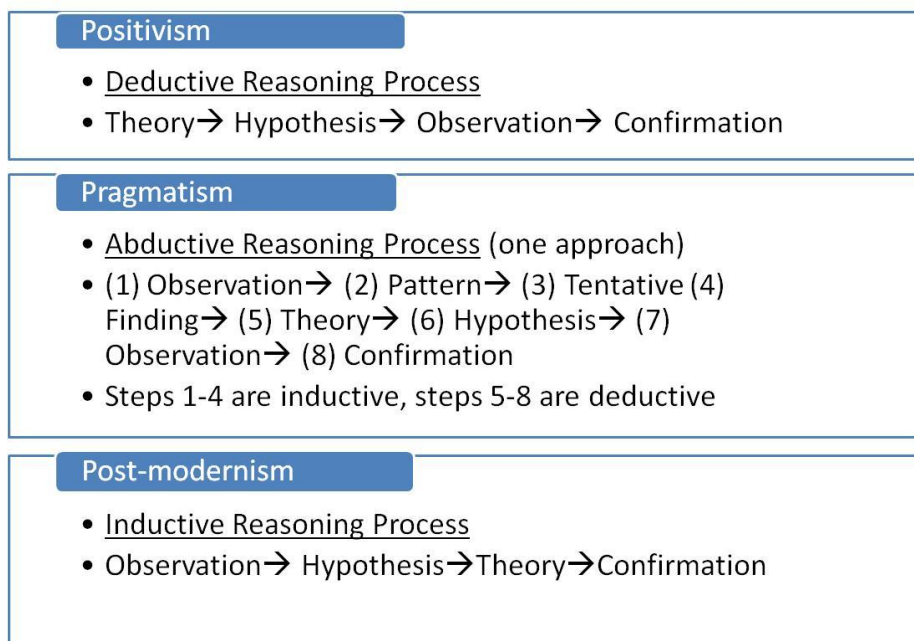


Figure 5. Reasoning Processes.

As such, these three distinct theory-building processes may be conceived of as part of a single, larger process (Figure 6). "The back-and-forth flow of induction and deduction make these coordinate and not competing processes of theory building and testing" (Dubin, 1978, p.230). Since each epistemology uses a different theory-building

process, each epistemology is discrete and distinct from other epistemological types, and may describe a different facet of complex phenomena (Boisot & McKelvey, 2010).

Because the three epistemologies utilize different approaches to theory building, different research outcomes may naturally be expected (Jayanti, 2011b).

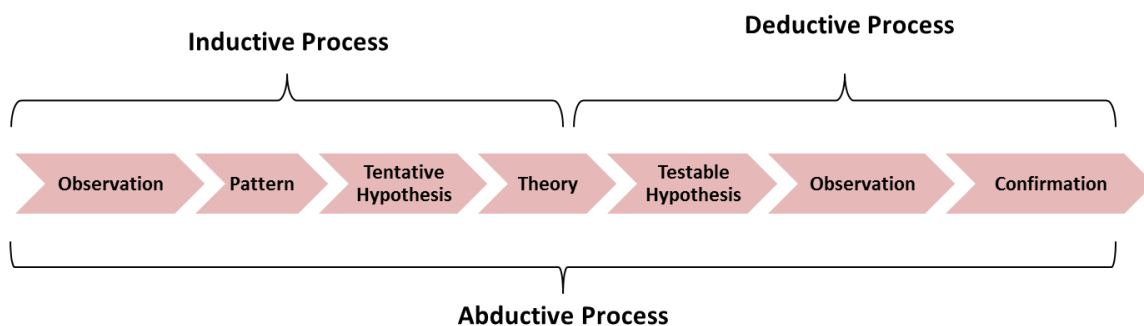


Figure 6. Theory building processes.

Eighth, this particular framing of *epistemology* implies this study has a strong basis in the process philosophy of *semiotics* (Van de Ven & Poole, 2005). Process philosophy looks at dynamic interconnections as the unit of interest, rather than stable or static units. Process philosophy implies that the order of events is critical—for example, if an HRD consultant administered intervention B before intervention A, one could rightly expect different results than if the consultant had administered intervention A followed by intervention B. This is because the initial starting points are different, which change the basis from which eventual conclusions build. This is a very different assertion than Positivism, which implies transitive properties to all forms of information and suggests the possibility of working solutions backwards as well as forwards.

American philosopher C.S. Pierce, known as the *father of semiotics*, argued that there are only three significantly different ways to frame cognitions. In 1867, Pierce presented a paper entitled, "On a new list of categories," to the American Academy of Arts and Sciences. This paper appears to draw on Pierce's reading of Kant, Aristotle, and

Hegel. In it, Pierce suggested that things can be understood in terms of three categories: *signs*, *objects*, and *interpretants* (Figure 7).

- *Signs*- abstract types which represent things that exist in reality—for example, a bumble bee in a photo may be understood in terms of the abstract category of bumble bees more generally, and may help me to connect this specific bumblebee that is depicted with my previous experience with bumble bees.
- *Objects*- physical things such as a printed copy of the photograph of the bumble bee, or the specific bumble bee itself.
- *Interpretants*- mediating representations in the mind, necessary to translating the relationship between the object and the thing or more general category in terms of which the object is understood (Pierce, 1868, 1893). In this example, the *interpretant* might be the name of the place or the flowers or the type of bumble bee depicted in the photograph.

Pierce argued that since all thinking is symbolic, although some thinking—namely mathematics—requires arriving at a bounded outcome, all thought can be understood using symbolic logic, which involves triadic categories.

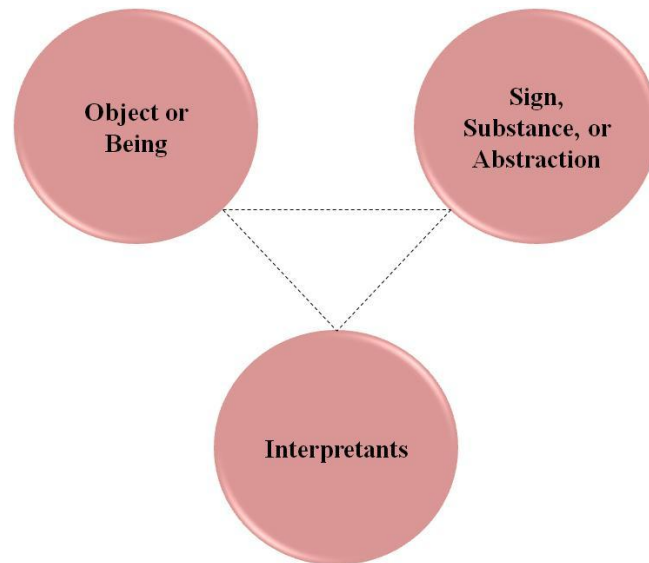


Figure 7. Peircean categories.

Logical-mathematical proofs of Pierce's thesis have been offered by Burch (1991) and Correira and Poschel (2006). Peircean categories have proved flexible, and in recent years, semiotic approaches have been applied to a wide range of fields from advertising research--examining denotative, connotative, and ideological meanings--to the study of aesthetics in art, to cybernetics, and even industrial design (Bouissac, 1998). According to Peschl (1998), three semiotically relevant themes dominate the theoretical basis of artificial intelligence: (1) knowledge representation, (2) knowledge manipulation and inference (3) simulation. Suffice to say, semiotic models have proven useful across a wide range of applications.

Following Pierce (1903), the three theory building processes are both *necessary* and *sufficient* to constitute the field of approaches to theory building. In other words, the *thesis* of inductive reasoning meets the *antithesis* of deductive reasoning, and forms the *synthesis* of abductive reasoning. Without inductive and deductive reasoning, abductive reasoning would not be possible; and without abductive reasoning, a middle ground for

thought between inductive and deductive approaches would not be possible. Outside of these three forms of reasoning, no other approaches to reasoning are possible.

Ninth, this study is predicated on *symbolic interactionism*, which views reality as emergent, developed through interaction with others (Blumer, 1969). While symbolic interactionism presumes that there is a reality *out there* to be experienced, people do not respond directly to this reality, but to their *perception* of this reality (Dubin, 1978). Symbolic interactionism suggests that people act towards things based on the meaning that those things have for them, and that these meanings are derived from social interaction and modified through interpretation (Blumer, 1969). These meanings are mediated by *symbols* and *signification*. Following Dewey, there is an emphasis on the *environment*, since human beings are best understood in the context of their environment (Hickman & Alexander, 1998). Symbolic interactionism stands in contrast to classical conditioning or stimulus response theory which suggests that a stimulus triggers an automatic and predictable response (Kuhlmann, 2012). Based on the foundation of the literature review and eight theoretical bases, research was conducted to help answer the overall question "What organizational epistemological differences mediate organizational learning?" Undergirding this question are three assumptions: (1) that internal epistemological differences exist between organizations, (2) that epistemological differences mediate organizational learning and how organizations *structure* their information, and (3) that epistemological differences mediate organizational learning and the selection and retention of data--in other words, what is retained and classified as *knowledge*, versus that discarded as *noise*.

The objective of this research is both to *develop* and *test* a model by utilizing an *abductive* research process in order to overcome the three main limitations of past research on organizational learning models--namely, their basis in *theory* rather than *practice*; their dichotomous approach to the complexity--either reducing organizational learning to the individual level or making organizational learning a generic construct; and their focus on *external* factors, to the neglect of equally important *internal* factors. Arguably, the dichotomous approach that organizational learning models have taken to reducing complexity--either by *reducing* learning to individual levels, or *absorbing* it into generic models (Boisot & Child, 1999) may be an *artifact* of the deductive and inductive theory-building processes that resulted in these models, and created the gap in the literature. Since research outcomes may be uniquely tied to epistemological differences in starting points (Glaser & Strauss, 1967; Tversky & Kahneman, 1981; Yin, 2003) it is only by proceeding differently than previous researchers that different results may be obtained.

Chapter 3: Method

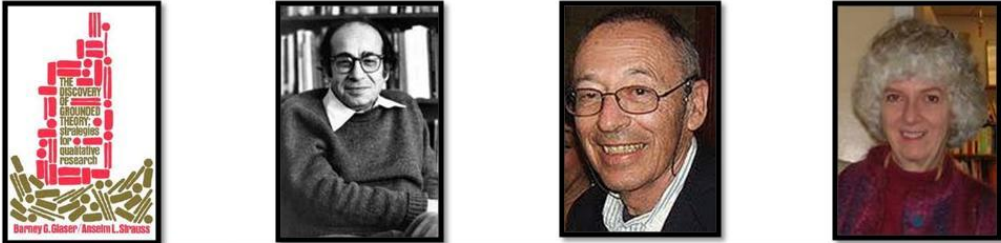
"Knowing is not enough; we must apply." – Johann Wolfgang von Goethe

The importance of selecting one's research method can hardly be underestimated. According to Glaser and Strauss (1967), the method which one uses to study a research problem deeply influences the research outcomes. In a similar vein, Yin (2003) suggested that "each [research method] is a different way of collecting and analyzing empirical evidence, following its own logic" (p. 3). According to Bryant and Charmaz (2007), "Any research method makes epistemological claims; a method must indicate why its application will lead to a development of knowledge, otherwise researchers would have no basis for choosing it in the first place" (p. 1). The purpose of this chapter is therefore to determine and describe an adequate method for framing the research question and investigating the problem of interest.

Essentially, my research question boils down to, "What organizational epistemological differences mediate organizational learning?" In general, *what* questions tend to indicate exploratory research, allowing investigation by a number of methods (Yin, 2003). While several analytical methods were considered, grounded theory was selected for five dominant reasons: (1) Grounded theory's basis in *abductive reasoning* may make possible a third way of approaching organizational learning, (2) Grounded theory shares its philosophical roots in *symbolic interactionism*, with Piercean triadic logic, which it was assumed mediates this study, (3) Grounded theory has been used as a practical tool for discovering and building theory, especially in contexts where complex social interaction is insufficiently understood and little to no theory exists (Fendt &

Sachs, 2008; Skeat & Perry, 2008) such as is the case in investigating the relationship between organizational epistemology and organizational learning, (4), Grounded theory seeks to answer understanding questions, such as, "What are the dimensions of the organizational learning experience?" (Richards, 2009), and (5) Grounded theory's origins as an attempt to close the gap between theory and research from the theory side of research (Glaser & Strauss, 1967), making it an ideal approach for studying an applied discipline, such as the field of HRD, which depends on the bridging of theory and practice. Just as Tversky and Kahneman (1981) later suggested that the different ways and starting points organizations use tend to influence their outcomes, Glaser and Strauss (1967) suggested that the adequacy of a theory cannot be separated from the process by which it was generated. This notion stands in stark contrast to the logico-deductive assumption that the theory is completely independent of the processes of generation. This process leads to *middle range theories* which fall between the minor working hypothesis of daily life and the all-inclusive grand theories (Dubin, 1978; Glaser & Strauss, 1967).

Yet, Grounded Theory Method is not a homogenous methodology (Figure 8). Grounded Theory Method is a flexible, dynamic methodology (Strauss & Corbin, 1990). As a dominant methodology in social sciences, Grounded Theory Method has sometimes masked a range of different qualitative research practices (Strauss & Corbin, 1994). Arguably, there are essentially three distinct approaches to conducting grounded theory research--namely, Glaser & Strauss's inductive approach, as carried out by Glaser; later Strauss' (often with Juliet Corbin) abductive approach; and Charmaz's constructivist approach.



Glaser & Strauss	Strauss (with Corbin)	Glaser	Charmaz
Original work lacked “how to” (Glaser & Strauss, 1967)	Strauss specified “how to” steps (Strauss & Corbin, 1997)	Glaser said Strauss’ steps “no longer GTM” (Glaser, 1992)	Charmaz claims a “new middle way” for GTM (Charmaz, 1995, 2000)
Original GTM reaction against deductive method	Strauss’ method is abductive (Reichertz, 2009)	Glaser’s method is inductive (Glaser, 1992)	Charmaz’s method is inductive—Charmaz claims Strauss’ work is not inductive “enough”

Figure 8. Grounded Theory Approaches.

First is the original Grounded Theory Method enunciated by Glaser and Strauss. This approach came as a reaction against the deductive method then dominant in the social sciences. While Glaser and Strauss (1967) are credited with co-developing a new method of conducting research, their original book lacked specifics of how to apply the new method to conducting research. This lack of clarity led to a fragmentation of approaches as differences in emphasis became clear.

The lack of specifics on how to apply GTM led Strauss to more clearly spell out the steps to applying grounded theory method to research (Strauss, 1987). In contrast to the initial formulation of GTM, Strauss stressed the importance of deduction and verification, and argued that the role of induction within GTM was overstated. Strauss' work elicited a strong response from Glaser (1992) who maintained that Strauss' version was no longer grounded theory method, but a completely new approach. To Glaser's mind, GTM is a purely inductive approach. Glaser essentially stood by his original

formulation of Grounded Theory Method, while Strauss expanded on his formulation with Juliet Corbin.

Subsequently, Charmaz (1995, 2000) claimed to reposition GTM as a middle ground between realist and postmodernist visions. This argument appears based on a reading of Strauss' theory as primarily a *deductive*, post-positivist approach, rather than an *abductive* methodology (Reichertz, 2009). I believe that this is mistaken, since (1) GTM was fundamentally developed as a reaction against *deductive* reasoning, and does not merely replicate the logic of deduction, and (2) Charmaz's explicitly Constructivist approach (Bryant & Charmaz, 2007), appears to rely on *inductive* reasoning at least as much as Glaser's explicitly *inductive* approach, which fails to convince that it is in fact a *via media*.

This study followed Strauss and Corbin's approach to GTM because (1) the Glaser-Strauss controversy has been characterized as one between *induction* and *abduction*, with later Strauss coming to a more *abductive* position (Reichertz, 2009), matching the assumptions of this study, (2) Strauss and Corbin's approach is relatively more structured, matching the *realist ontology* (Rennie & Fergus, 2006) that is dominant within the field of HRD (Jayanti, 2011b), (3) its explicit yet flexible guidelines are useful for guiding the work of new researchers, (4) its more extensive use of diagrams and visual representations of relations between concepts (Strauss & Corbin, 1990) better matches with the practical need of this study to create an *operationalizable* model of organizational learning, (5) Corbin and Strauss' (2008) emphasis on developing diagrams from data facilitates a move from description of what is happening to an understanding of the process by which it is happening, (6) Strauss (1987)'s vision of GTM assumes that

verification and testing are essential. This study closely hewed to the process of Grounded Theory Method as enunciated by Corbin and Strauss, with some modification. While Corbin and Strauss (1997) suggested following steps 1-6 straight through, I followed those steps, cycling between steps 3-6 multiple times (Figure 9).

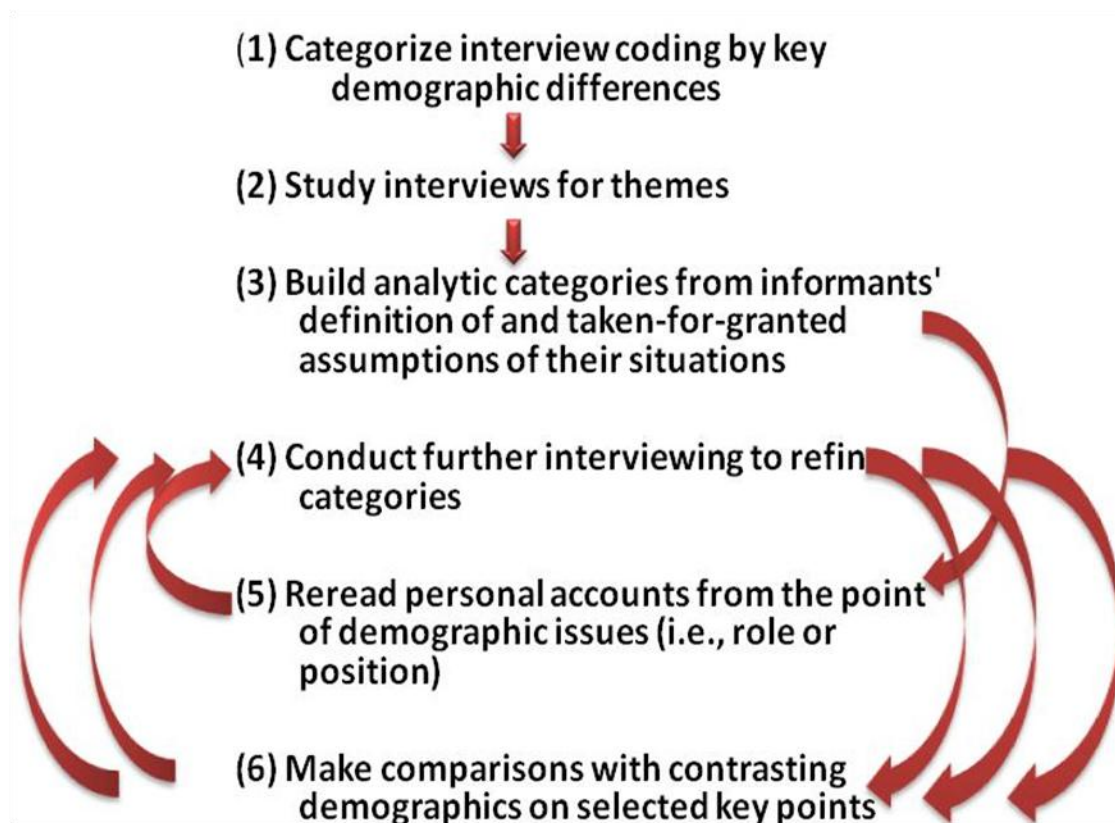


Figure 9. Reformulation of Corbin and Strauss Methodology.

Validation

While grounded theory method has occasionally been criticized for its lack of rigor, Cooney (2011) suggested that research designs conducted using grounded theory should be considered sufficiently rigorous if they document the following three points:

- (1) Personal beliefs, values, and assumptions of the researcher
- (2) Rationale for the research design, research process, data collection process, and sampling

decisions

(3) Description of approach to generating analysis and theory

In order to document and bracket my personal beliefs, a bracketing essay was written. This essay was revised and refined until significant categories of bias were uncovered. The content of this essay is summarized (Figure 10). In order to address a rationale for the research process, the sampling will be described. Finally, a description of the approach that will be taken to generate analysis and theory follows in the research method section.

Bracketing mechanisms and audit trails

Since the proposed investigation began with a deep examination of the current research in order to frame and focus the questions, and this process led to the development of a hypothesized theoretical model, it became particularly important to bracket my hypothesized model before going out into the field to experience the setting. A reflective essay was written regarding my personal opinions, biases, and beliefs about the topic of an organization's epistemological orientation. From that essay, the following ***personal biases*** emerged, which appear to fall along the lines of three basic categories, namely multi-method/multi-skill, quality, and social role.



Figure 10. Personal biases.

Having identified my own personal biases, I am going to attempt to bracket these issues when I go out into the field for data collection. I will compare the data I collect against these biases, and cross check new data gathered from the sites against the written bracketing document to ensure *internal validity*. I will also conduct *memoing* in order to bracket my responses from the factual data. In as much as possible, I will test my key assertions against *counterfactual* statements, to examine whether my assertions are logical.

Sampling

Four manufacturing companies were sampled in order to test the theory that there exists an organizational level epistemology that mediates organizational learning processes. Manufacturing companies were selected because they are involved in most of the activities found in other types of organizations including acquiring raw materials, producing finished goods, marketing, distributing, billing, and other business activities (Garrison, Noreen, & Brewster, 2012). In order to ensure that the construct of an organizational epistemology does span organization-wide, multiple locations of a single company were sampled. To determine whether there are multiple organizational epistemologies—and that there are significant internal differences, such that the traits that are observed within organizations are not simply a function of external factors—multiple organizations were observed.

Because the focus of this research involves organizational epistemological differences, questions were posed to people at different levels of the organization in order

to help determine if significant epistemological differences exist throughout the organization.

While much of the research literature assumes that by limiting sampling within a single industry, we will be able to control a number of significant factors including industry turbulence (Andriani & McKelvey, 2009; Chakravathy, 1997), density of competitors (accounting for both direct and indirect competitors) (Dess & Beard, 1984; Emery & Trist, 1965; McCarthy, Lawrence, Wixted, & Gordon, 2010), industry levels of knowledge or *spillover* (Cohen & Levinthal, 1990; Lewin, Massini, & Peters, 2011; Nieto & Quevedo, 2005), and professional culture (Braganza, Awazu, & DeSouza, 2009; Ford, Voyer, & Wilkinson, 2000), interviews quickly revealed this assumption to be false.

No two companies could be understood to compete in the same market space. Each company offered multiple product offerings, some of them dominant focuses of the company, others emerging. Each product type competed in different market spaces, against different sets of competitors, sometimes at different price points, frequently across a number of industry segments, often to different customer bases. The academic idea of being able to *control* for industry is not a practical possibility, and may be outmoded given current industry conditions.

To Vice President Andy Schmidt:

It depends on the business. Across the board, in fairness, let's just say the competitor we run into most often across all of our businesses is ZZZ because they participate in [our main] industry, they participate in our secondary industry, and they participate in our tertiary industry. I would tell you, in those spaces we

have more share almost across the board than they do with the exception of probably the tertiary industry. Where we participate in the same products and services they do, we compete very nicely with them head to head. But their main business is in a space we don't compete. They bought three companies, so they're bigger than we are. They're also, what, 10, 15 times our size? And they compete in a bunch of other markets we don't compete in, so it's hard to say.

To Vice President Gary Forman:

Depends what industry you're in. So in product line A, we have more. In product line B, we have less. In product line C, we have less. In product line E, we have more. So, each of our markets is so different in that regard. So in some ways, we lead the market, and in other ways we don't. And so we need to close that gap. So that's the mix. There's no one right answer there. Each of the divisions and each of the markets are so different.

To Vice President Robin Fitzpatrick:

It does break down by segments. So if you look at division A, it's really 3 main competitors, and we're probably the market leader but ZZZ is a very strong second. SMI, over time, is less of a competitor, although you should never rule them out because they've got a lot of resources and you know that could change over time. In division B, we are with both our brands, but there's just a lot of other competitors, there's like 40 manufacturers that can already produce our latest breakthrough product. So you never know when someone's going to come up with something else disruptive. We are a market leader in the areas we are competing

in, but we don't compete in the very low end because we're not very good at that. And it's not our brand. Our brand is more of a premium brand. So we're not the overall the market leader. I think it depends on which segment.

Engineering manager Cathy Knudsen saw a pattern:

Well we lead in our main offering, in that market we're number 1. In our secondary product, I'd say we're on the top end, probably the top 2, and then with our new product, we definitely have market share to gain there, obviously.

Director of operations Brad Edmondson continued: "Yeah, it totally depends on product line, so, in some cases we're the very small kid on the block and almost no market share, in other cases we have the most market share." PDP lead Matt Chen didn't mince words: "In my key products, we have more market share than the competition. And in our growing products, we are trying to take market share, so, not a leader there." Every company has its own particular market niches and spheres of competition. This is probably because it wouldn't make sense for two companies to compete in exactly the same arenas, on the same competencies.

A decision to include Company 3 in the sample was made after sampling fell through at another site, and a subsequent organization that was sampled resulted in the obtaining of exactly one respondent despite several follow-ups and various means of contact (email, phone, LinkedIn). Company 3 was selected specifically because of the number of times that it was brought up by respondents at Companies 1 and 2. "Well, we're not EFG, but we're good." The sheer number of times that Company EFG was brought up as an aspirational comparison--unprompted--suggests that Company 3 is

indeed a comparable source, despite its somewhat broader market focus. While Company EFG is involved in the consumer manufacturing market space, it is also located in a number of other market niches. In the words of respondent Katie Alford:

The way that we're organized is that we have five business groups, which if you were to take them and carve them off, out of EFG, businesses within those business groups could be their own company. And be multi-million and -billion dollar companies on their own. So we have this organization of sorts based off of each kind of I'll call it market types or even business models to some degree.

This sentiment was echoed by a Chief Technical Officer:

I think it's highly dependent on the business unit because there will be fluctuations in obviously you know EFG is in many ways a collection of you know small companies, small to mid-sized companies, I would say, as much as it is a large company, and so you're going to get some different answers, I think depending on the business unit and the function.

Company 4 was contacted early on in the sampling, but respondents did not begin to trickle in until after Company 3 was sampled. It is significant to note that Company 4 has a slightly different manufacturing focus than Companies 1 and 2, but is in a market space that overlaps with one of Company 3's significant foci. A decision to include company 4 in the sample was made in order to add clarity in comparison to Company 3. Arguably, this difference in market focus was not so significant, given that each company by definition has its own competitive niche, and hence, no company is ever perhaps directly comparable. It simply would not make sense for two companies to try to compete

in exactly the same market spaces. This sample is reasonably comparable given the market realities.

While the final samples were not perfectly balanced in terms of numbers, the company samples are believed to be comparable, since the third and fourth companies sampled had a number of non-respondents. One participant in manufacturing provided me with the names and phone numbers of four colleagues with whom I followed up both via phone and email. A second participant forwarded a description of the study to two peers, and carbon copied (cc'd) me on the email. Neither of these peers responded. A third participant attempted to put me in touch with a peer, who did not follow up due to schedule. Two participants agreed but backed out at the last minute. This meant that nine potential participants were outstanding. Subsequent attempts to recruit new participants at these companies via email and LinkedIn messages did not produce results, which effectively concluded the sampling.

Research Method

Research proceeded by means of semi-structured individual interviews. While the possibility of conducting focus groups was considered as one means of collecting responses to the question set, all questions were posed in individual interviews to ensure candid responses and to minimize the impact of internal workplace politics on the data. For the interview, individual participants were asked a set of 12 questions with follow up.

Questions for the semi-structured interview were derived from questions used in previous organizational learning or innovation survey instruments. As part of the

literature review, a sample of 50 distinct survey instruments was carefully reviewed in terms of purpose, sample size, coefficients, number of dimensions, and theoretical base. While many of the survey instruments reviewed did reach adequate sample sizes to claim validation (some included samples of upwards of 10,000), all instruments were primarily derived from theoretical models, rather than data from real-world contexts. For example, the Dimensions of Learning Organizations Questionnaire (DLOQ) appears to *operationalize* Senge's model of organizational learning. Because of this limitation, researchers and practitioners have no way of knowing whether there exist categories of organizational learning outside of those tested as part of the theoretical instrument--in short, there is no way of knowing what we don't know. While all of the survey instruments suffered from this limitation, many of these instruments included good questions in order to help further probe the phenomenon of organizational learning. Therefore, questions for the question route were selected from among questions already posed by other researchers.

Topics for questions were selected by the following criteria:

- Was the dimension mentioned in a survey or model in the previous research?
- Was the dimension mentioned in *more than one* instrument or model?
- Does the proposed question capture a *unique* dimension (as in, being non-overlapping or non-redundant with other questions proposed for the question set)?
- Does the question capture an *internal* organizational dimension (rather than an external one)?
- Does the dimension focus on the *organizational* rather than *individual* level?

Using these guidelines, I developed the following questioning route, drawing questions from several of the current organizational culture questionnaires which exist, and rewording them in a way that ideally makes them more comprehensible to participants (as some of the questions were worded in a sort of esoteric or technical manner that is better suited to survey-format than interview format) (See Appendix 2). Initial interviewees were recruited through recommendation by personal contacts or LinkedIn, and the sample grew through snowballing. Interview sessions lasted approximately half an hour, and were completed either in-person or via teleconference or phone call, depending upon location and interviewee's preferences.

Interviews were recorded with the permission of the participants, and transcripts were typed verbatim by the researcher. Each audio recording was reviewed at least twice to ensure accuracy. Personal and corporate identifiers were scrubbed from the transcripts, along with names of CEOs, colleagues, competitors, indirect competitors, customers, suppliers, previous employers, parents' and siblings employers, exemplary companies, and acquisitions. The process of scrubbing transcripts became much more involved than anticipated, as participants began to name companies outside the sphere of companies directly involved in the study. These pseudonyms became entangled, as participants at one company cited another participating company as exemplary.

For instance, in the words of an operations director at ABC:

Although I will say some pretty cool stuff has come out of the company, maybe up at headquarters more in the design group, but I think that we are probably more interested in cost effective technologies, than the innovative, if you um, are

familiar with EFG, I think EFG is more on the other innovative, they probably spend a lot more R&D dollars than we do on things that never make it.

Or in the words of a manager at BCD:

Right now I am a vice chair for the local Knowledge Management forum, and so that is a group that brings together thought leaders in knowledge management across the metro and it was started probably about 12 years ago now by some folks at EFG, Agrifood, GiantFood, BigFood, Defensetek, us at BCD.

There existed a greater ecology among companies than is apparent on the surface. Because the number of identifiers to scrub became lengthy, a separate excel file was kept with pseudonyms to ensure consistent application of pseudonyms across cases. This excel file was not entered into Nvivo and will be deleted as soon as the project is completed. Scrubbed transcripts were individually uploaded into Nvivo analysis software as they were completed.

A scrubbed Excel sheet was uploaded to Nvivo, to help track responses back to specific organizations (i.e., company 1, company 2, company 3), job levels (i.e., upper level management, mid-level management, front line employee), and demographics (i.e., gender, range of years with company) to permit the tracking of trends. Scrubbed transcripts were tied to demographic categories representing the respondent.

Further pains were taken with the scrubbing of individual identities on transcripts. While there was always a plan to assign pseudonyms to individual participants, to assume that responses would remain confidential, assigning pseudonyms from participants wasn't as straightforward as originally assumed. Because a number of participants were part of

minority groups, I felt it would be unfair to *whitewash* the sample and depict the diverse group as homogenous with generic Anglo-Saxon names. Yet branding participants with minority names risked serving as an identifier, potentially singling them out and "blowing their cover." Therefore, to preserve some of the diverse makeup of the sample, while protecting individual identities, a decision was made to assign ethnic pseudonyms at random, in approximately the proportion sampled. I spent a significant amount of time researching both first and last names' countries of origin, both to determine roots of actual respondents' names, and to find suitable pseudonyms. Gender was preserved, since gender was not deemed to ease identification of the relatively gender-balanced sample of respondents.

In keeping with grounded theory method, an emergent approach to coding was taken, whereby nodes were determined after reading over the transcript (based on themes occurring in the transcript), rather than classifying the information into pre-determined categories. Transcripts were re-coded word by word using *open coding* to identify the core categories and themes. The first pass of open coding created themes such as culture, decision approach, customer focus, professional development, and knowledge maintained. These open codes were deemed too broad to provide useful insights for comparisons, so these nodes were deleted and interviews were re-coded to more finely-grained categories. As such decision approach became decision approach-consensus, decision approach-depends on the amount of money involved, decision approach-process, decision approach-top down. Likewise, decision proactivity came to describe decision proactivity-depends on area of company, decision proactivity-more advanced planning,

decision proactivity-more flex planning in response to market, and decision proactivity-mixture.

Memoing was conducted whenever any unique or puzzling statements were made--for example, when a participant whose job role heavily involved learning and development stated that he didn't bother with learning new things because of the level at which he was hired. Or when an operations director completed listing out her many challenges by saying she hoped her child would get an internship at the company.

Subsequently, after open coding was completed to identify themes, specification of categories, context, conditions, interactions and consequences was completed. This specification of categories and interactions represents a form of *axial coding*, by which data are put back together in new ways (Strauss & Corbin, 1990).

Ethics and Human Subject Protections

There are several human subject protections that were used in order to ensure research quality. First, the project relies on previously validated question items and is subject to a review by the university's institutional review board (IRB). In addition, respondents will remain anonymous. I will not reveal participant responses or non-responses to anyone within or outside of the organization. Data was coded to pseudonyms, and identifiers such as company name, and the names of competitors, colleagues, corporate executives, suppliers, and previous employers will be eliminated from transcripts. Transcription will be conducted solely by the principal investigator, and audio recordings were erased after transcribed. Audio recordings underwent a minimum

of a two-pass transcription process to ensure accuracy of transcription before audio file deletion. No organizational identifiers were included in order to protect the identity of the sampled companies.

Limitations

This study has several limitations. First, this study will not necessarily generalize to other companies or industries. To the extent that the organizations involved in this study are strongly involved in learning activities, the scope of recommendations may be somewhat more narrow than might be anticipated with organizations less actively involved in learning. Second, since results are limited to English-speaking respondents, it is not known whether they will generalize to non-English speaking respondents. Third, since the project requires that the selected organization be a *learning organization*, to the extent that not every organization is a *learning organization*, the findings will be limited. One company contacted for the study insisted that research would "have nothing to offer" them, since they do everything "flawlessly" and that "nothing different could ever possibly be done." Since not every company is in fact open to learning, or the possibility of progress, the participating companies may be unique. Despite these limitations, the research topic that was investigated represents significant progress for the field of HRD, since it represents the first step in an effort towards developing an *organizational learning* model from empirical workplace data, rather than theory.

Chapter 4: Findings

"Out of clutter, find simplicity." -Albert Einstein

Introduction

This study was an attempt to find out first-hand how organizations learn. Since previous research was based on untested *theory* codified into survey instruments, the purpose of this study was to uncover which dimensions of organizational learning are relevant in practice. Participants were asked questions in a semi-structured interview lasting approximately half an hour. Responses were typed verbatim in transcripts, which were scrubbed of identifiers, and input and then coded into themes in Nvivo software. The names used throughout this study are pseudonyms.

Since the analysis proceeded by grounded theory method, the results often held the power to surprise. Analysis of participants' responses led to the emergence of the theme of various forms of engagement--a category not previously listed in the literature. In other words, this research uncovered an *unknown unknown* which would not have been possible if this study had proceeded through a survey methodology like much of the previous research. Although I had considered other methods of research, I felt fortunate to have taken this particular approach.

Organization of Findings

While the dissertation proceeded by grounded theory method, using a four phase process of open coding, followed by axial coding to uncover the results, and utilized

bracketing mechanisms so as not to test a specific model, for simplicity's sake, the findings are organized in terms of *unsupported*, *partially supported*, and *supported* themes. While several of these themes such as *company culture*, *knowledge management*, *employee versus customer focus*, and *focus for growth* were described in the literature on *organizational learning* and *learning organizations*, the theme of *engagement* emerged from analysis of participants' responses, even though they were not directly asked questions about *engagement*. The theme of *training* was viewed by participants as a sub-theme, or form, of overall *engagement*.

Demographics



Figure 11. Demographic Data.***Approach to Interpretation and Analysis***

Interview sessions lasted approximately half an hour, and were completed either in-person or via teleconference or phone call, depending upon location and interviewee's preferences. Interviews were recorded with the permission of the participants, and transcripts were typed verbatim by the researcher. Each audio recording was reviewed at least twice to ensure accuracy. Personal and corporate identifiers were scrubbed from the transcripts, along with names of CEOs, colleagues, competitors, indirect competitors, customers, suppliers, previous employers, parents' and siblings employers, exemplary companies, and acquisitions. Scrubbed transcripts were individually uploaded into Nvivo analysis software as they were completed, and coded for themes.

Just as miners sometimes pan for gold, sifting through a rough mixture dirt and rocks, swishing the pan with water with ever-finer sieves to come to the fine tiny light pieces of gold at the end, in keeping with grounded theory method, an emergent approach to coding was taken. While this entailed significantly more work than simply coding themes in response to questions as might have been done with structured interviews, I believe that the end result is much better.

First, rather than classifying the information into pre-determined categories, nodes were determined after reading over the transcript and finding themes. The first pass of open coding created themes such as culture, decision approach, customer focus, professional development, and knowledge maintained. These open codes were deemed too broad to provide useful insights for comparisons as I tried to sort the data and run a

coding query, so these nodes were deleted and interviews were re-coded to more finely-grained categories. As such decision approach became decision approach-consensus, decision approach-depends on the amount of money involved, decision approach-process, decision approach-top down. A third pass at coding involved recombining overlapping themes. Sometimes these overlapping themes were really obvious, for example recombining the categories *work enjoyed*, *project of interest*, and *intrinsic motivation* where participants specifically described being intrinsically motivated by projects at work, into the overarching category *nature of the work*, because all of the categories described projects that were compelling and in some ways enjoyable to participants, which they viewed as a source of engagement with their work. Similarly, placing the more specific category *volunteering to mentor kids* under the larger umbrella of *community involvement* seemed an obvious change. Other times the overlapping themes were not quite so redundant, but represented different facets of a phenomenon. For example, the categories of experimenting, cross-functional learning, hands-on learning, learning from peers, pairing expert with novice, and watching YouTube videos were recognized to be sub-modes of informal learning. Therefore, these categories were collapsed into the larger category. A fourth pass at coding was taken to make sure that participants were talking about their own experiences, rather than guessing about how they thought things might work in other departments. This data about perceptions of outside departments was deemed relatively less valuable, since its accuracy may or may not be valid. Areas in which individuals were talking outside of their realm of direct

experience were un-coded at the nodes, leaving only the information of which participants appeared to have direct, personal knowledge or experience.

For example, knowledge management manager John LeMonde speculated:

Do you mean software to use the documentation? Is that what you're asking? In my work, I don't. Ok, so I do not know what other people do. I suspect they probably have different ways to create documentation, but I don't know, certainly what that would be.

While this answer was initially coded at the node documentation because it spoke about documentation, the response was clearly not informed and therefore not as useful as if someone were speaking from experience about the documentation process, as other participants did. Removing other speculation often required reading contextual cues, and reviewing the passages in the overall surrounding context to make a judgment.

Since I had also assigned source classifications to each of the transcripts, coding a transcript to a particular person or identity, and then assigning the person particular traits, such as gender, estimated age range, function, organization (company number), location, time at the company, level (i.e., upper level management, mid-level management, front line employee) among others, I was able to run matrixed coding queries to see whether there were correlations between nodes representing data themes, and personal traits, including trends by company or role level or gender.

Source Classifications					
Name		Created On	Created By	Modified On	
Person		2/4/2013 6:15 PM	EJ	3/7/2013 6:35 PM	
Name	Type	Created On	Created By	Modified On	
Pseudonym	Text	2/4/2013 6:15 PM	EJ	2/4/2013 6:15 PM	
Gender	Text	2/4/2013 6:15 PM	EJ	2/14/2013 11:02 AM	
Level	Text	2/4/2013 6:15 PM	EJ	2/4/2013 6:15 PM	
Age	Text	2/4/2013 6:15 PM	EJ	2/4/2013 6:15 PM	
Function	Text	2/4/2013 6:15 PM	EJ	3/6/2013 12:56 PM	
Organization	Integer	2/4/2013 6:15 PM	EJ	3/4/2013 2:24 PM	
Location	Text	2/4/2013 6:15 PM	EJ	3/7/2013 6:31 PM	
Time (at co)	Text	2/4/2013 6:15 PM	EJ	2/4/2013 6:15 PM	
Company Structur	Text	2/4/2013 6:15 PM	EJ	2/4/2013 6:15 PM	
Company Type	Text	2/4/2013 6:15 PM	EJ	3/4/2013 2:30 PM	

Figure 12. Source classification categories.

Results

In my study, I asked participants questions using a semi-structured interview format. *Supported categories* involved those dimensions which showed significant differences among categories, and which were found to be useful dimensions for discriminating among companies.

While organizations differed significantly in their responses in some categories, such as *culture* and *approach to knowledge management*, other categories were less useful for delineating differences. Questions were directly asked about each of the categories--including *decision types*, *decision proactivity*, *innovative vs. cost effective technologies*, *role clarity*, *knowledge turnover*, *market share*, *focus for growth*, *employee vs. customer focus*, *training*, *company culture*, and *knowledge management*--except for *engagement*. The category of engagement emerged from review of participant responses.

- Supported categories represent those dimensions which demonstrate significant delineation among companies
- Partially supported categories represent dimensions for which significant differences are shown, but which are not distinct and do not constitute a *stand-alone* dimension (i.e., this dimension may be part of another dimension)
- Unsupported categories represent dimensions which do not serve to distinguish differences between companies, or for which no clear patterns are found

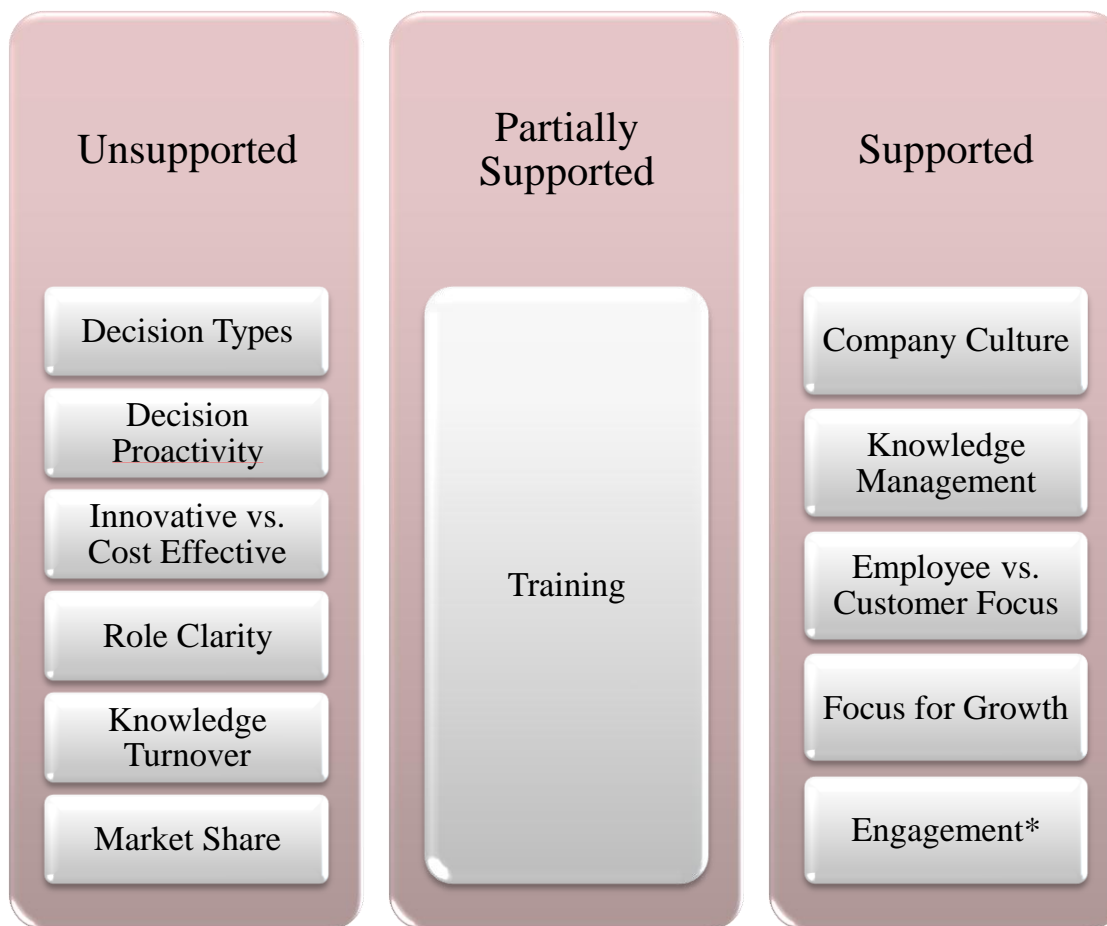


Figure 13. Themes from extant literature, Supported, partially supported, and unsupported hypotheses, with an emergent category.

Unsupported Categories

Although the literature implies that each of the categories of questions which were asked should be significant dimensions of *organizational learning*, since each of the dimensions were mentioned in multiple survey instruments, and focused on an *organizational-level* rather than *individual-level* dimension, not every dimension was relevant.

Unsupported: Decision Types.

Although Mintzberg and Waters (1985) hypothesized that there were three types of strategic decision-making, namely *planned*-where leadership intentions are generally precise and explicit, *consensus*-where strategy comes from employees and emerges through consensus, and *process*-where leadership controls the process of making the strategy while leaving the content to those most impacted, in the industry sample, there were no hard-and-fast differences in decision making processes, nor did clear decision *types* emerge. Perhaps because of the complexity of the markets the companies were situated in, each company used all of the types of decision-making, often in different situations. Sometimes multiple types of decision-making were even used within carrying out a single decision. This implies that the idea of decision *types* was not useful in practice.

Operations Director Brad Edmondson explained:

You know, it's all of the above, I mean it all depends, I mean some of them are doing different, and some of them are you know diplomatic, around here, we say democratic, and I think it just depends what kind of situation it is; there are so many different ones.

In Company 2, there was something of a split between formal, technical areas which utilized relatively more formal advanced planning, and other areas of the company which were more market responsive.

According to Jaycee Beckham in marketing:

It depends on the situation, for sure. So if we're developing a new product, there's definitely a process to that decision making so there's a bunch of different gates that it has to go through, but I think the day to day, something like in my job, it changes. There's not a defined process as to how you go about making the decision in deciding if it's the best thing. A lot of it is reacting to what's happening in our market.

When I asked for an example, she continued:

So if we're behind in retail, like we are today, we've got until the end of the month to hit our goal and we're coming short, we'll come up with a reactionary plan. *So that that plan is always different, how we come to that plan is different, just based on the different things that are selling within the different segments and what items we may be missing.* So we might come up with a salesman's spiff or promotion that comes to react to the lagging in retail.

Jaycee's colleague Zeina Alsahnii concurred:

I think they would probably be done, engineering would be done very much in advance, the product side of it, but the rest of it tends to be more *reactional* and based on the current environment.

Don Atkins highlighted how multiple types of decision-making were often used to solve a single problem:

I think that the direction gets set from the top and goes all the way to the top of the corporation [i.e., leadership driven], but I think then there's opportunities for everybody to really uh get an opportunity to add input into that [i.e., consensus].

Learning and development specialist Katie Alford echoed this sentiment:

I have this beacon that is my role of what I should be doing and I'm not necessarily told *thou shalt* get to it by going A,B,C. I can choose from a decision making standpoint on my own to achieve that going D, E, and F. But, you know what that strategy is and what the priorities are for 2013, that's coming a little bit more from leadership.

Unsupported: Decision Proactivity.

Similarly, *decision proactivity* was not a significant differentiator, although the item was included in Miller and Freisen (1982)'s futurity scale and scored highly.

According to participants, how quickly decisions were made significantly depended upon area of the company and type of decision to be made. Companies took substantially similar, pragmatic approaches in terms of decision making. All companies both attempted to be proactive, but often found that the best laid plans needed adjustments in response to the market. Decisions were not inherently proactive, or inherently reactive, but part of a larger feedback loop process of deciding and adjusting and adapting.

Organizational decisions overall are probably best conceptualized in a more organic way, not in binary contrasts, but perhaps dependent upon where in the lifecycle the decision is.

In the words of Vice President Gary Forman:

Plan as you can, and then you've got to react to what the market's doing to you in various kinds of ways. So there are some things that are very, very planned, over

long periods of time like capital and the space for facilities and any number of things like that and plants and then there are other things that better react to what's going on in the market.

In the words of Chief Technical Officer Don Atkins:

I would say both are in there, our desire is to try and plan as much as we can, but you have to have a feedback loop, to adjust for where you're at because the best laid plans often time don't turn out the way you wanted them to.

Unsupported: Innovative vs. Cost-effective technologies.

Although Miller and Friesen (1982) and Porter (1980) posited that companies could be divided by their concern in producing innovative technologies versus cost-effective ones, related to both risk-taking propensities and strategic approaches, this assertion was not supported. Companies had broad product portfolios which encompassed both ends of the spectrum. Innovative products were themselves subject to cost-constraints in order to achieve profitability. In the words of project engineer Tom Mencil, "If we're going to develop or invest in some new innovative technology, it has to pay. In the end, it has to be cost effective, so we don't look for just the one and not the other." To environmental health and safety manager Jordan Hammond, it was all about being reasonable. "I mean, there's only so much technology you can really put into it before it's a ten million dollar [product], and you're like OK."

Companies did not want to take unreasonable risk, and often innovated by applying known technologies in new ways.

In the words of Learning and Development Director Rob Erickson:

I think it's, we tend to not develop brand new technologies and put them on brand new products; crazy risk with that, but maybe taking something that's out there already in terms of the technology and applying it on a [specific product]. That's been a great recipe for us, you know.

According to manufacturing engineer Cathy Knudson:

We do a lot of what we call applications engineering, so we are not taking like raw innovation in a lot of cases, and applying that, but more applying technologies, combining technologies, these type of things, into new products.

Innovation was not sought out just to innovate for innovation's sake, but innovation often came from real customer needs. According to VP Andy Schmidt, "I think innovation comes from meeting with your customers and understanding what they're trying to do. And being able to adapt or adopt projects or products to their needs, or services for that matter."

To Chief Financial Officer Robin Fitzpatrick, innovation was about creating value:

We need to continue to drive value, we need to think about total cost of ownership for that customer, because they are making choices based on what are their other options, and we may not need to be the cheapest product, but we need to provide them with a total cost of ownership that's competitive because they do have choices, and over time, if we don't do that, you know, our market share will erode.

To environmental health and safety manager Zara Marwick, it was about selling convenience:

Generally we're more expensive than our competitors, you know, I would say we we're more likely to be in the premium sector than the entry level brand, but I guess what we actually sell to our customers that we do things for them to save time and money.

Nor was innovative versus cost effective a hard and fast binary. As innovative products matured, costs came down. Marketing manager Rebecca Burton put it this way, "It's an interesting company because I think we tend to produce technologies at any cost, but then as they begin to be more developed, its price starts to slide towards the right." The question of innovative versus cost-effective was not either/or but both/and.

Unsupported: Role Clarity.

Questions about role clarity were not particularly useful for the purpose of delineating organizational differences, even though the literature seemed to imply that role clarity would be a significant differentiator. The literature hypothesized that highly effective organizations would have high role clarity and that strong visibility of different roles' duties would enable organizational effectiveness, as employees would quickly recognize who to go to for particular issues. The literature also implied that high role clarity might serve as a motivator, as the increased openness makes career ladders more visible. Questions of role clarity appeared in both in Kohli and Jaworski (1993)'s market orientation scale and Garcia-Morales, Ruiz-Moreno, and Llores-Montes (2007)'s absorptive capacity scale. Role clarity was scattered throughout roles, and no significant pattern was found.

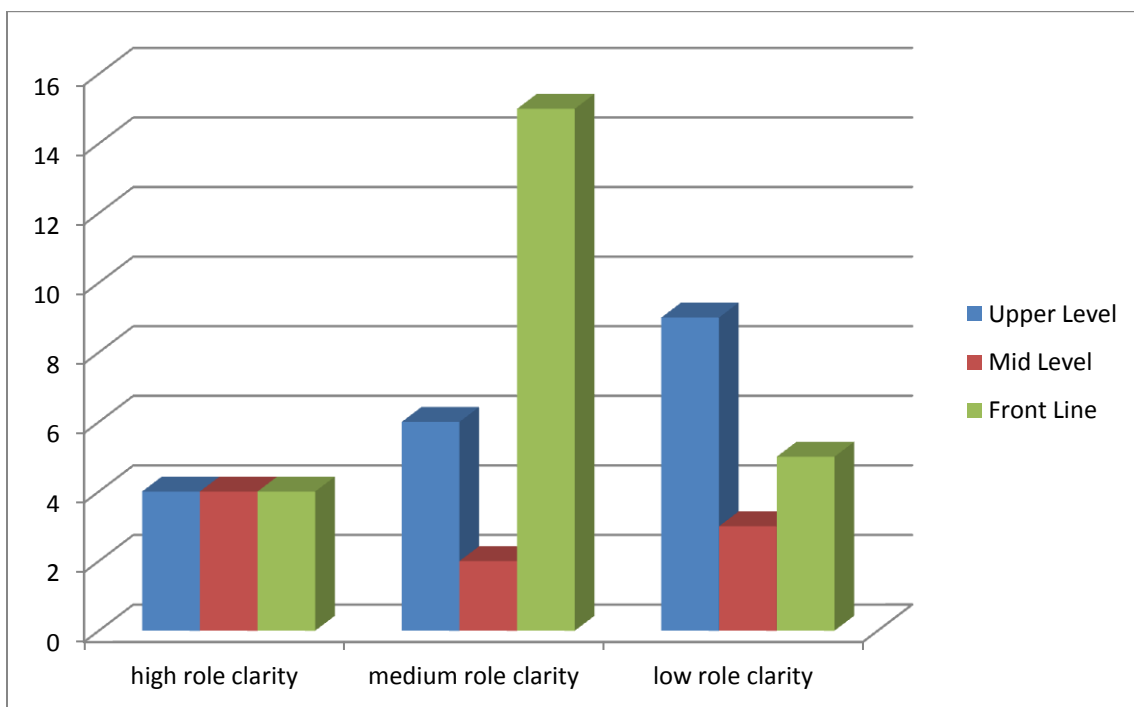


Figure 14. Job levels and role clarity.

Front line, mid-level, and upper level roles were all equally likely to have high role clarity, while upper level managers were somewhat more likely to have low role clarity. It was interesting that role clarity was not correlated to job level, as several participants seemed to hypothesize.

Vice President Andy Schmidt generalized his experience:

I've always found that the more responsibility I've been responsible for, the more ambiguous my job description tends to be, so there's more clarity at a macro level of, profitability, revenue growth, earnings, you know, the people and how you care for them over time, but there's less specifics in the day-to-day tasks, so

depending on the level you manage at, I think it becomes less clear and less formal.

Environmental health and safety manager Jordan Hammond imagined role clarity in a visual way:

I think management has the big overall 30,000 foot view, then as you go down the chain of command, the scope gets smaller and smaller what you're actually [focused on]. The guy on the floor, he's focused on one part per time, making sure the specs [specifications] are good. Supervisor is focused on the bigger, OK this shipment, and engineer [is focused on his area], everybody's focused on his area.

While role clarity was sometimes high for front line positions, there was a not always direct correlation.

For production supervisor Ryan Dietrich:

Probably 20% of my job is a clear task where I have specific tasks that I have to take care of, per day, but I would say 80% of it are not really clear, you don't know what you get into when you come in in the morning, it can change constantly.

Engineer Tom Mencil provided an example:

We've talked about that our job responsibilities, our roles and responsibilities are not real defined. An engineer in one area doesn't necessarily do the same things as what an engineer in the other areas do. There's a lot of overlap, you can have a lot of common parts, but not in others, and an example of that would be, in say, a machine shop, the individual engineers do the quoting on new parts. So they

would get a new drawing from corporate and they would say well, I'm going to run it on this machine, and I can do it at this rate, and because of that, the cost would be this, and we have to bid our work. And the area that I work in, in tooled stampings, I don't do the quoting. Our tooling engineer does the quoting and there's a good reason for it, and the reason is that in tool stampings, the quoting is so determined by the tooling, that if you don't know what the tooling will be, you don't know how to quote it and so our tooling engineer quotes it. Kind of what I'm getting at, though, is that there are some slight differences, but yet we all basically have the same job description. So we've been talking about that recently, and it leads to some confusion. Even amongst ourselves, we make assumptions that well, this should be your job because it's my job, it's part of my job, so it should be part of your job, the other guy will go, no I don't do that (laughs), so it could be better defined.

In practice, some tasks normally associated with a particular role may have been taken up by others in the organizations who have more talents in or time for a particular task, using a competency-based approach rather than a role-based approach. To marketing employee Sara Wilson, "There's lots of things that you do that aren't quote unquote, in your job description, but that's part of the very team attitude around here, so everybody just chips in to help everybody get things done." It is possible that there are trade-offs between role-based and competency-based approaches for assigning job tasks which need to be investigated further in the future.

Unsupported: Knowledge Turnover.

Garcia-Morales, Ruiz-Moreno, and Llorens-Montes (2007) suggested that companies meet the challenge of market turbulence and rapid change by developing a rapid pace of organizational improvements. To Garcia-Morales, Ruiz-Moreno, and Llorens-Montes, *learning organizations* are those which rapidly turnover their entire knowledge base every 3 years. While this may sound extreme, this belief is widely held, and the idea is encapsulated in many current surveys, including the large-scale OECD innovation survey. In reality, asking participants the question, "Would you say that your organization has had more new knowledge entering the organization over the past 3 years, or would you say it has been building up over a longer period of time?" is a lot like asking the question, "Which came first, the chicken or the egg?" Companies build on underlying capabilities, which enable them to see new things, which lead them to innovate. The underlying relationship between long-term knowledge held and recent innovation is inextricable.

Marketing manager Rebecca Burton perceived knowledge turnover as a primarily *internal* rather than *external* development:

I would say it's interesting, because as I try and think about the improvements that we've had over time, it's in not a continuum, there's some changes that happen, so we try something and it works, and so we continued to refine that, so I think that it's kind of new knowledge entering the organization but it's not necessarily new knowledge entering the organization from *outside* of the organization. It's a condition that's been put on the organization that says we need

to make a change, and so rather than looking at it as an incremental improvement, you say OK how would we zero base this?

To learning and development professional Miguel Gutierrez, it was a bit difficult to disentangle, not only because he was working from a perspective of having been with the company for just three years:

You know, from what I can see there's a lot of knowledge and understanding of where we need to go that's been accumulating for longer than that, but really it's a pretty dynamic company too, so, you know, even when I think back 6 months ago--now granted we're still kind of working our way through that transition--but we looked pretty different as a company even then as we do now, so, in terms of structure, it's constantly changing and constantly shifting so I would almost say that it's been within the last 3 years simply because the landscape has changed so much over that time, and when you think of the market that we're in, too, that makes a lot of sense, right?

Partially Supported Categories

Partially supported categories represent dimensions for which significant differences are shown, but which are not distinct and do not constitute a *stand-alone* dimension. For instance, a partially supported dimension may be overlapping with or part of another dimension. In this study, there was one partially supported category, namely training as an area of significance.

Partially Supported: Training as an Area of Significance.

All of the companies involved in the study were significantly involved in organizational learning. This made the category less useful as a differentiator between companies in this sample. Training was viewed broadly by participants, who discussed on-boarding, webinars, conference attendance, reading books, social media, coaching, and mentoring as forms of training. Overall, training was classified as *partially supported* because participants did not appear to view training as a clear, self-contained dimension. Instead, training, while important, was one among several means of *engagement*, which motivated employees. There was generally less formal training in manufacturing roles, where cost was a concern and it was not necessarily in the budget.

In the words of Director of Operations Christine Roberts:

The lean master's manufacturer's alliance group has been helpful, my peers have been helpful, aside from that, not really, there might be other groups out there, I just don't know what they are. When we have no travel. We're very tight on our budget here, so, it's not likely that I'm going fly out somewhere, get some more training, or be involved with a group.

Specific gaps in training in company-specific manufacturing processes were noted, which is significant because company-specific manufacturing processes are not taught in technical schools, and cannot be viewed in the generic YouTube videos that those in manufacturing roles sometimes turn to in order to learn processes.

In the words of Robert Lehman, a manufacturing engineer:

You know, we spend plenty of time in like legal training and stuff like that.

Everybody takes online classes on that, all of the time, but whenever you're doing production, there's not a lot of training involved.

It may be the case that training and development professionals neglect developing training for manufacturing because they feel less comfortable with the highly technical hands-on processes, and because such work is lower profile and hence less likely to be rewarded.

Training, in the contexts in which it was discussed, appeared to be viewed as form of *engagement*, a smaller part of a much larger construct. Interestingly, *engagement* was a category that emerged from the participants, who although not directly asked, began to excitedly describe all of the ways in which they were engaged with the company--things ranging from awards programs and employee groups to community involvement, training, competitions, and interesting projects.

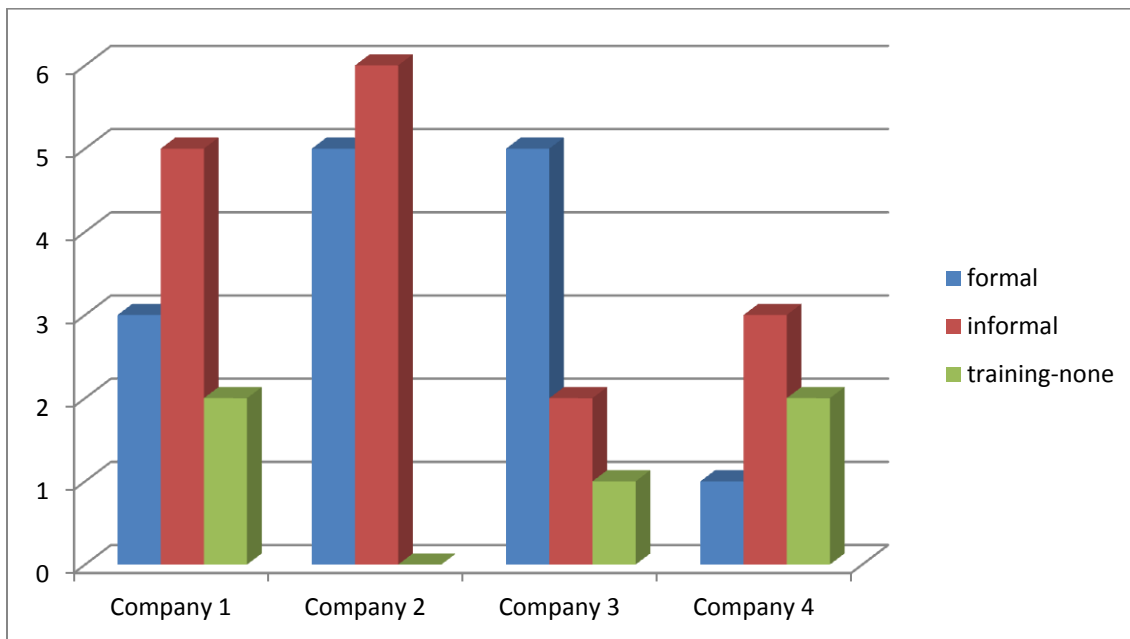


Figure 15. Types of training by individual.

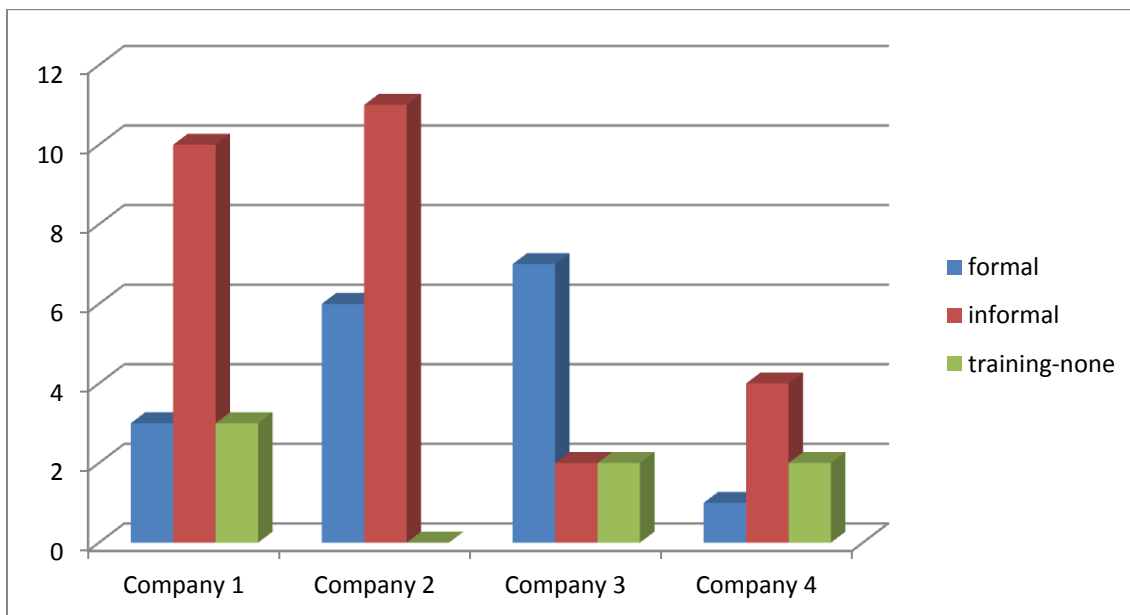


Figure 16. Types of training. Total overall mentions.

There were several modes of informal learning:

- Cross-functional learning or sharing across departments
- Experimenting

- Hands-on learning
- Learning from peers
- Pairing expert with novice
- Learning by doing
- Watching YouTube videos

Participants specifically described several modes of delivery:

- Conferences
- Webinars
- Coaching

Some participants mentioned that their work experience included no learning or coaching. This was generally either in unique roles at the executive level, where such formal training was difficult to target and obtain, or in direct manufacturing roles for which there were significant time and resource constraints.

For some executives, it was something they missed. To Senior Manager of Organizational Development and Training Edie Eastman at Company 1, "I wish I did, actually that's kind of a missing piece for me personally, probably." Similarly, Vice President Ed Propkowitz at Company 4, "I have historically been mentored, although since I've been in my current role, I have not had a mentor, although I miss that because I do think that's incredibly important."

For other executives, it was something to be over with. Rather surprisingly, Vice President of Human Resources Gary Forman at Company 1 seemed to regard the idea of development at his level as completely unnecessary:

Well, I came in as an experienced hire, though right? So I came in as a direct officer and so I didn't go and do [leadership development or mentoring] as these were my fields of expertise when I came in and largely why I was hired so it wasn't that kind of a [need]. I would say that, that was more a function of the way I came into the organization than anything else.

In manufacturing roles, there was also a notable lack of training and development opportunities. Engineering manager Carlos Abraxas was blunt: "Typically not, no. I would definitely say no."

To Product Engineer Robert Lehman:

I would say it's, go over there and do that and try to glean what you can from the people around you. And that's where, I don't think that's very you know, I think a very appropriate way of doing, *to me, training is the most important thing you can do* to, for many reasons, for one, for sure to make good quality product and to reduce downtime and reduce scrap and bad quality, but a lot of times, I don't think we spend the time in the production training, as we should. You know, we spend plenty of time in like legal training and stuff like that. Everybody takes online classes on that, all of the time, but whenever you're doing production, there's not a lot of training involved. You might work with somebody a little while, but they may or may not keep you on there long enough to learn the job. They may put you

on the machine by yourself before you're ready. And that's things that engineers don't have control over, that's a pure production tool. And what happens, is, as a result of that in production, the supervision puts a person in that's not ready, and they make scrap, and the engineer, at that point, the engineer has to go deal with it, and those are those things that are kind of reactive engineering, right? You're reacting to a problem that was, that may or may not have been you know completely necessary.

When I asked why he thought that was the case, he provided this rationale:

Because the production matrix are different than the engineering, the product quality metrics. The engineer is responsible for product quality. The production's areas are typically responsible for overtime, being things like that, and so as long as they've got you know indirect costs, department expenses and stuff like that, and so if you were cutting overtime and department expenses and all that kind of stuff, your training is not one of the things they actually have funds allocated for, and if funds aren't allocated for it, it is not going to happen.

Supported Categories

Supported categories involve those dimensions which involved significant differences among categories, and which were found to be useful dimensions for delineating among companies. These categories made sense to participants, who found that these themes were resonant with their lived experience of *organizational learning*. In addition, these categories are useful for telling companies apart. Their *discriminant* value

depends partially upon their non-overlapping with other internal constructs, hence setting them apart from overlapping models such as Senge (1990), Pedlar, Burgoyne, and Boyndell (1996), and Marsick and Watkins (2003) among others. Each of these supported categories is distinct.

Supported: Focus for Growth.

While Deshpande, Farley, and Webster (1993) hypothesized that companies would tend to focus on human capital, rapid growth, or smooth operations with a single-minded focus, organizations are complex, and each of the companies focused on each of the areas; no company focused on only human capital, or only rapid growth, or only smooth operations. Where the companies differed was in what proportion they focused on each of the areas. While Deshpande, Farley, and Webster (1993) assumed that companies would fall into neat classification in terms of being described by a single category, no company was well described in terms of a single focus.

Instead each company had their own specific blend of foci, with Company 1 exhibiting a split focus between human capital and M&A, Company 2 outpacing others in terms of their focus on efficient operations, and Company 3 focusing on human capital more than efficient operations or M&A. Because the responses were not either/or, as had been conceptualized in the literature, but both/and, I was glad that I had used a qualitative methodology to capture that nuance and possible significant categories which may have been missed or ruled out as *noise* with a questionnaire.

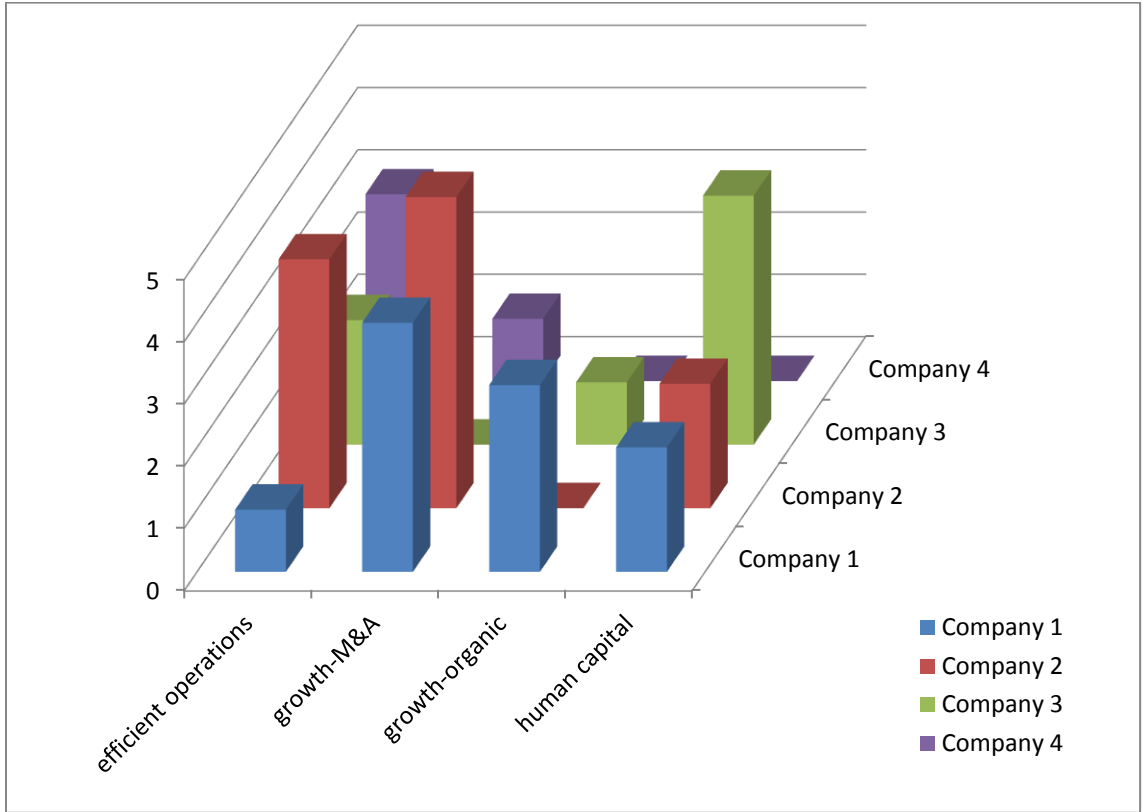


Figure 17. Focus for growth by person.

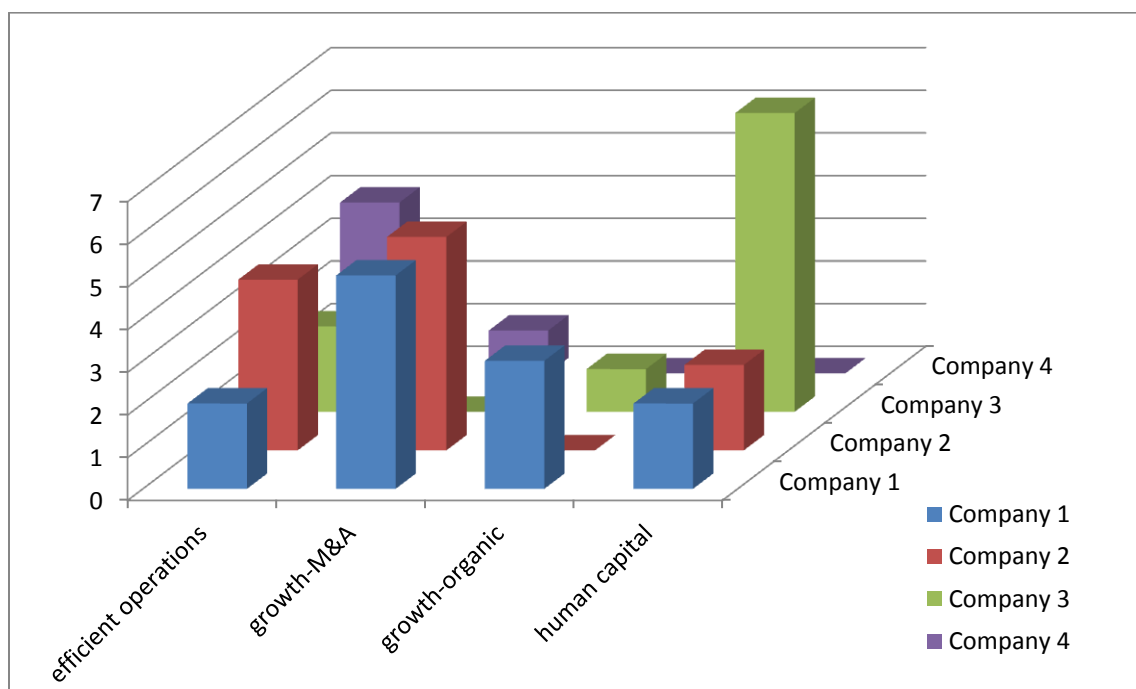


Figure 18. Focus for growth by total responses.

Looking at the data on focus for growth, many companies utilize multiple strategies for driving growth. The first chart, responses by person, are controlled for individual responses (i.e., if a single individual said the same thing three times, it is only tallied once), while the second chart indicates how many total times the theme was mentioned. If a particular theme is mentioned a lot, this may indicate a possible passion for the topic. For instance, in the above charts, four people mentioned human capital as significant in company 3, but they mentioned it seven times. Both charts were included in order to depict both how *broadly* a particular view was shared, as well as how *intensely* people may feel about it. Given that perception can significantly influence social phenomena, it was felt that neither perspective captured the whole story.

Company 1 showed a significant focus on growth, both internally and externally, possibly as a result of recent growth initiatives and long-term goals for growth, as well as

a secondary focus on human capital. These results held true regardless of whether the phenomenon was measured by individual responses, or total responses. This sentiment was captured in the words of parts manager Laurie McIntire: "Right now we're really pushing for growth, but I think the company realizes that we need to invest in people to do that."

Company 2 was primarily focused on external growth and efficient operations. A far secondary theme was human capital. In the words of marketing professional Chris Campbell, "I would definitely say that efficient operations and growth are pretty highly valued, the focus is definitely there, but you know the human capital is stressed in a way that that's how it drives to those results, so I would say that you know, the result is what is valued, but it's understood that the people get you there." The responses for Company 2 significantly matched up, such that each individual mentioned the themes once. Since Company 2 was in the middle of a significant growth phase, the combination of external growth and efficiency made sense given the context.

Company 3 was focused on primarily on human capital, with a secondary focus on efficient operations, and a tertiary focus on organic growth. By far, the category that was mentioned most often was human capital. In the words of Don Atkins, "Probably where we invest the most in making an enterprise like that work is you need to have those cross-fertilization opportunities and that takes some investment in the human capital to do that." Significantly, Company 3 did not mention external growth. Arguably, the focus on human capital and organic growth seemed to fit together, with the human capital being seen as a means of powering the organic growth.

Company 4 was somewhat unique among the sample in their single-minded focus on efficient operations. This theme fit in with other aspects of the company, specifically, their focus on process over people, lean initiatives, and heavy process documentation. Improving efficiency seemed to be viewed not only as a means of improving present performance, but also driving future growth. In the words of learning and development professional Miguel Gutierrez:

Right now in particular I think we're focusing a little more on not necessarily employees, but operations, on really streamlining and making sure that we set all of our processes to who we need to be in the long term and making sure that our people are capable and aware of where we're going.

Supported: Employee Focus vs. Customer Focus.

Employee focus versus customer focus was part of Porter (1980)'s strategy types. While all of the companies mentioned customer focus, this category seemed to be partially supported, in that participants from Company 1 mentioned employee focus significantly more than participants from other companies, who did not mention this category at all. While only one company out of the sampled four mentioned employee focus, the fact that it was a strong emphasis at one firm implies that it may well be a concern in the larger corporate universe, and that there are likely to be other companies out there that place a similar strong emphasis on employee well-being. Although this sample is not likely to be representative of the entire universe of companies, if it were, it would imply that 25% of companies are *employee-focused*. Not only did four participants

from Company 1 mention that the company was employee focused, they mentioned this item a total of 10 times, implying that there was in fact a significant focus on employees.

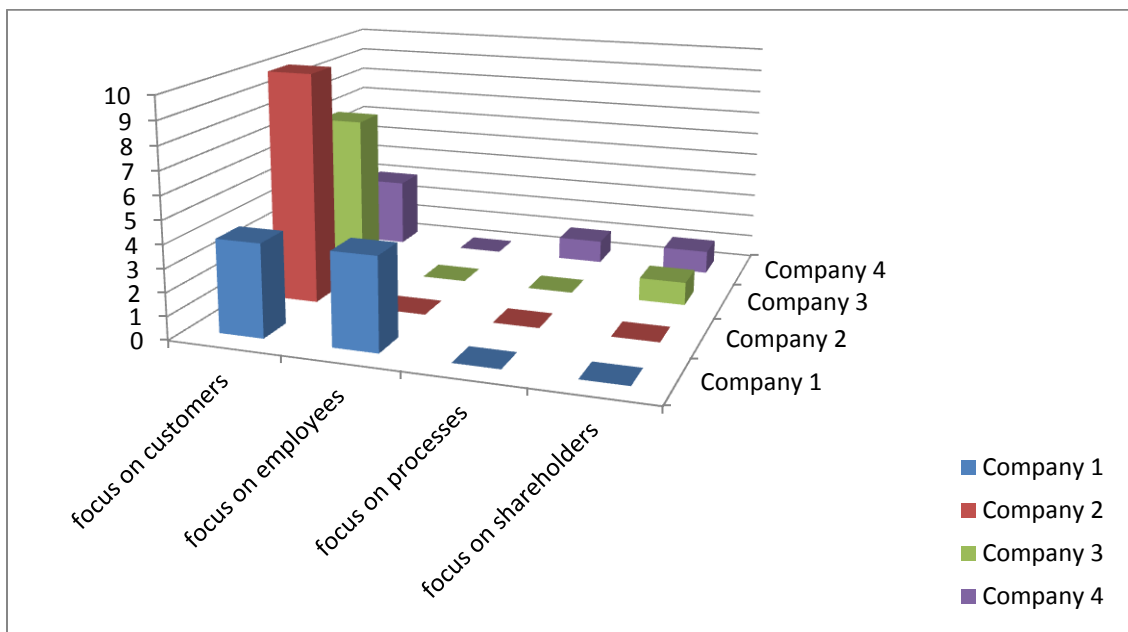


Figure 19. Employee vs. customer focus by individual respondents.

***Company 1 and Company 3 totals do not add up to total sample because not every participant had a response to this question.**

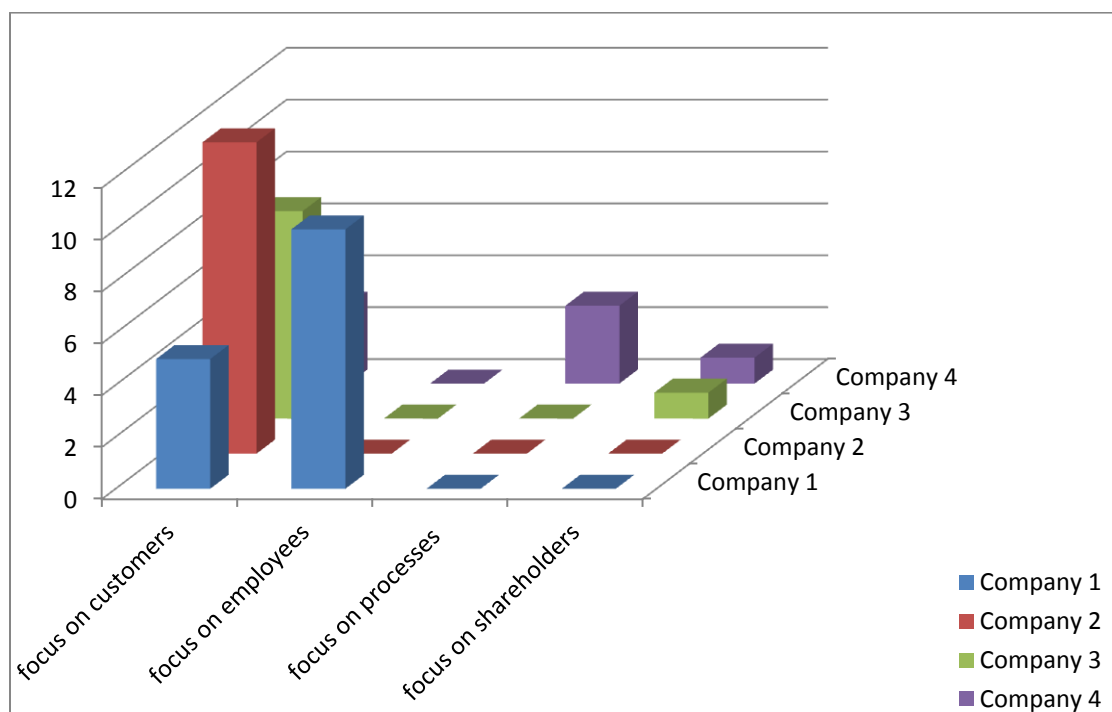


Figure 20. Employee vs. customer focus, total number of mentions.

Production supervisor Ryan Dietrich described the employee focus this way:

We do really focus on our employees, to make sure we have all the tools they need, not just hand tools or anything like that but knowledge-based tools, to meet the needs of our customers. There's not one without the other, they don't need us, so you have to keep our customers happy.

For Chief Financial Officer Robin Fitzpatrick, the employee focus was an eminently practical approach that ultimately ensured innovation:

I think it starts with the employee, within ABC, I really do. I believe that we feel as an organization that if your employees are treated well, they will seek the best solutions for the customer, so this is where we're definitely focused on how we help that customer, but we're empowering the employee to come up with ideas on

how to do so, versus just listening to what the customer says solely. I mean, some of the innovation that we come up with is meeting a need that a customer didn't necessarily even tell us they had.

This employee focus was strong and shaped how managers treated their employees. It shaped practice to an extent that upper level management was apparently unaware of, including making special accommodations to work responsibilities based on tenure. This employee focus was truly unique to Company 1, since members of other companies often asked for clarification as to what was meant by employee focus. The response of Marketing manager Rebecca Burton at Company 3 was typical: "I don't, I really don't understand, I mean I heard this question a bunch of times, what do you mean?" Likewise, Learning and Development Specialist Chad Hammond at Company 4 seemed a bit baffled by the idea, "I don't know if I understood your question correctly. Is that driven by, is that for the benefit for the employees, is that the question?" Once he understood the concept, he confirmed that an employee focused company was really outside of his experience. "No, there is no, there is no retention culture. Retention for the sake of it, no. No, there isn't anything like that, improvements are pretty much by the market, bottom line." At Company 4, this seemed to fit with the significant process orientation and efficiency focus.

Company 2 was described as very customer-centric. According to Learning and Development Director Rob Erickson: "I think we do indeed believe that it starts with the customers. We want to be growing market share, and segments, and developing new segments, but again, that comes first and foremost centered around the customer."

Company 3 described their *customer vs. employee focus* as a balance between customer focus, employee focus, and service to shareholders. The latter was an emergent category, not mentioned in previous literature.

To Chief Technical Officer Don Atkins:

Customers are required, but employees are required too to deliver on that and if you're not taking care of your employees, ultimately that's going to cause problems from a business continuity standpoint, which is going to be reflected in your service to your customers.

He continued:

It has got to be balanced there, but ultimately we exist for shareholders to be able to have an enterprise to invest in. We have to have customers, we have to have sustainable businesses, and to have to have report systems and recognition systems and support systems in there to support the employees that we require to deliver that, and I don't want to put numbers on people because people are people, they're not numbers, but really, employees are our greatest asset. I'd say that's probably true of any corporation whether they recognize it or not.

An asterisk was added to the dimension by a participant at Company 3, who suggested that the company was best understood as *shareholder focused*, a dimension neglected by Porter (1980) and others. The ultimate focus was on profitability for shareholders, rather than necessarily the needs of customers. Being able to produce a significant financial return for shareholders sometimes took priority to developing

products which may greatly benefit consumers but which may not turn a significant profit.

A participant at Company 4 added the category of *process driven*, suggesting that the focus was really on processes rather than people overall.

In the words of training professional Miguel Guterrez:

Right now in particular I think we're focusing a little more on not necessarily employees, but operations, on really streamlining and making sure that we set all of our processes to who we need to be in the long term and making sure that our people are capable and aware of kind of where we're going.

By focusing on extensively processes and production improvements, rather than an end point, participants appeared to believe that they could generate continual improvement. This was intriguing, insofar as this potential dimension was also generally neglected in the *organizational learning* literature. However, as closely as employees focused on *processes*, this *process* focus ultimately benefitted *shareholders*--the client audience on which Company 4 was generally focused.

Supported: Company Culture.

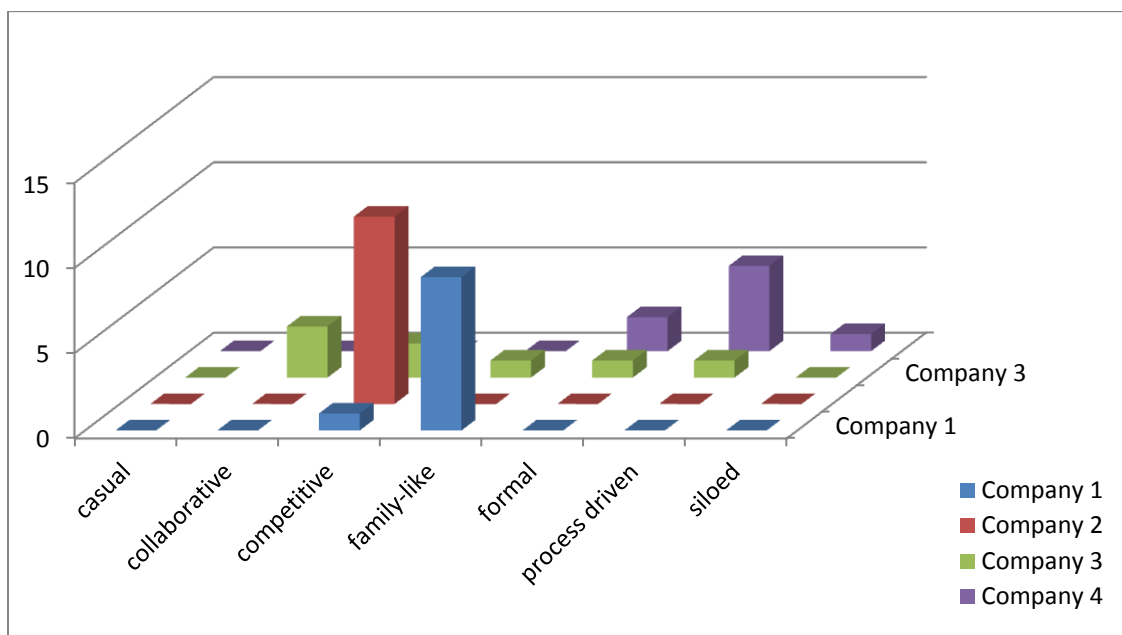


Figure 21. Company Culture. Coded to individual responses.

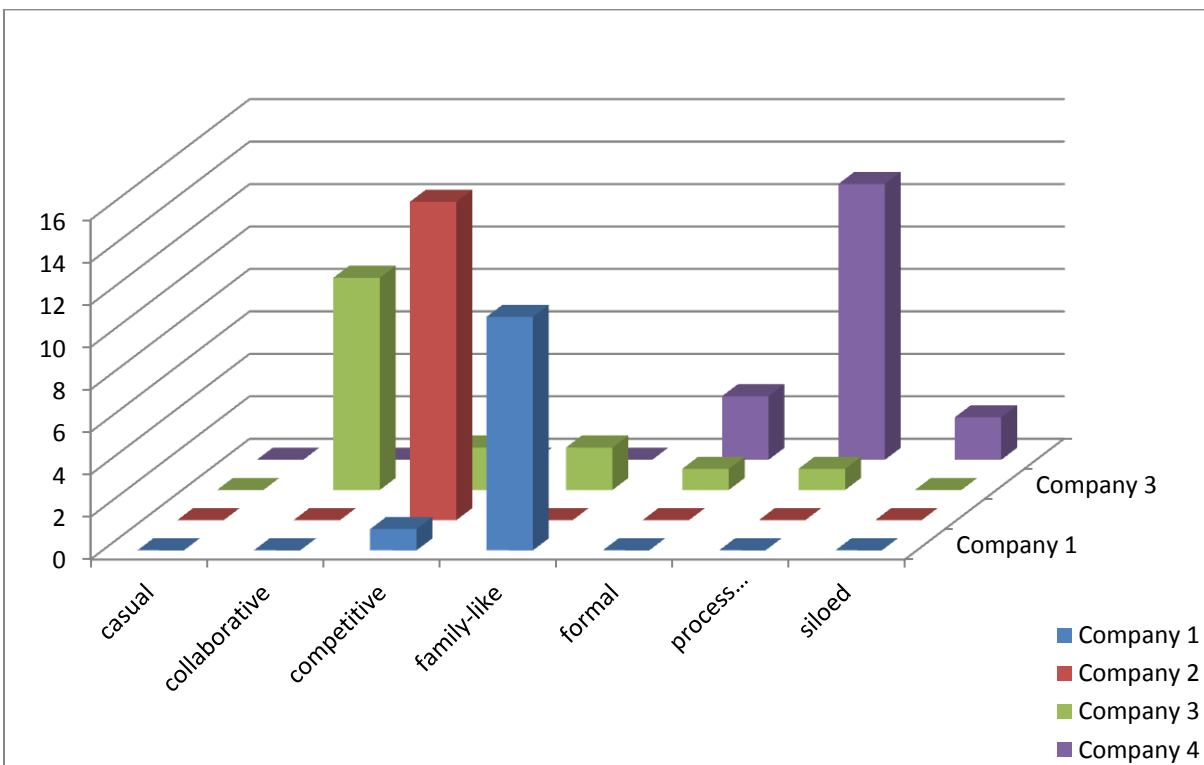


Figure 22. Company Cultures, total number of mentions.

Company 1: ABC's Company Culture: People Centric.

Company 1's culture was generally described by participants as family-like and people-centered but occasionally competitive against groups seen as *outsiders*, whether people in other departments, or competitors.

In the words of Gary Forman, Vice President of Human Resources at ABC company:

It certainly has a relationship base to it, right? So it's a culture grounded on the values and I think that the values don't fully explain the culture, but that's a foundation for the culture. OK, and then within that, and I don't know if you know this, I had kind of an academic background...and so you look at the dimensions of culture, there's a lot of lit [literature] on culture and the values and foundation of the culture but I kind of like looking at what are their norms, what are their practices, what are (laugh) you know, what are the symbols of the culture and it's a very strong culture, I mean to say, how do you describe the culture? I probably spent hours and hours thinking about this culture and building some bottles of this culture in various kinds of ways. And it's a very competitive culture, ok, so we are, it's very relationship focused, its competitive in the sense that we do want to beat the competition, it's a genuinely humble culture. Our current CEO Mark really reinforces that in many different ways that keep it that way, and it's [an] important part of the culture. So anyway I think it's a typical Midwest culture, you know, those are some of the things I would say describe the culture.

Later, he continued on, "I'd say our approach to M&A is to try to be disciplined. And disciplined is a hallmark of this culture. That's another thing you can use to describe the culture."

This sense of a disciplined Midwestern culture was also observed by Senior Organization Development Manager Edie Eastman:

You know, in my sense in having worked with other companies, it's a very strong Midwest culture, so very self-severe, individuals who have good hometown values, and in fact the company puts a very strong emphasis on our corporate values, so there's a point in history where the organization went through a very difficult time, a couple decades ago and almost went under, and at the [time the then-] president made a very good decision to define what he thought the corporate values were and really diffuse those throughout the organization so it's become a strong foundation that is woven into so many different things. We're driven by our people and performance values.

According to Andy Schmidt, a functional Vice President of ABC:

You know, we like to say our culture gives us a more caring environment. My guess is family-like presents a different discussion for, or at least a different description for some people, but I think that we first care for people and believe that people ultimately drive interaction with customers and customer interaction, and satisfaction drives good business.

To production supervisor Ryan Dietrich, that meant:

We all take care of each other here. But it's competitive. We have to keep a competitive edge, against competitors, we're high performance, we're fast, you know it's a very fast job, so we're competitive in that aspect but we do take care of each other.

This sentiment was echoed by Tom Mencil, a veteran manufacturing engineer at company ABC:

In some ways it's family-like, we have like the guys out here, we're pretty close and we do things socially together even on weekends, and evenings and stuff, but at the same time, it can be competitive between different areas of the plant.

Jordan Hammond, a newer environmental health and safety manager, opined:

"You're still around guys and machinery and equipment and stuff like that right, but you feel like people, it's family."

To Chief Financial Officer Robin Fitzpatrick:

I think it is a culture that wants people to succeed, so you find support from others, but yet, there are performance standards as well. So that's the only reason why I struggle a little bit with saying, "Is it family-like?" Because within a family situation, you forgive those you love, you know, an awful lot, and you should. But the one difference I see within ABC is you still need to perform, you still need to accomplish whatever your mission is so there are some clear messages to the employees on what those goals are, and a supportive process to help you achieve those goals, but not moving forward and not achieving success is also not an option within ABC.

Yet, on a practical level there was a lot of forgiveness.

Operations Director Christine Roberts illustrated this point with a story:

I had an operator come to me and say you know, I'm going to be 50 here this year, and I don't really want to set jobs up anymore. I just want to run them. Like, ugh. Yeah, we don't have that job here. But we do let [them]. We do have people who they get to that point, where they can't think, or they just run a job, they're actually not even engaged in thinking here at work. So that's what happens. We just had a guy retire here after 50 years with the company. The longest we've had is 62 years. One of the guys was 88, I want to say 88 and still working here. So that gets to be tough, so we kind of blocked him off. OK, you run this machine, run this job every day, OK, because it really doesn't really do us any good to put him on a machine where he's setting up or making changes because he'd probably crash the machine which would cost us thousands of dollars.

Company 2: BCD's Company Culture: Fast and Furious.

Company ABC was very different from Company BCD, a younger, faster company, with a lot of enthusiasm for the product and employee empowerment in decision-making. It was described solely in terms of its competitiveness. Every respondent noted the competitive nature of BCD, and its competitive nature was mentioned a few times by some of the participants.

According to organization development director Heather Englebret:

I've been here for 14 years, so it's not like I'm just off the turnip truck with the BCD culture, and I would definitely say it is high-performing and extremely

passionate. The people that come to work for BCD work there because they love the product, so we are in a different situation where people are so committed and passionate about the product. When I used to work at other places, you know, you show up and you do your job and when I first came to BCD 14 years ago, it just floored me. I walked in and there were people with window clings in their cars with BCD all over and everybody wears BCD clothing. And *it's almost like a BCD drug, you know everybody just gets so amped up about it and excited about it, we have that going for us*. Which I think is a unique situation. I worked at Defensetek, it wasn't like people are wearing shirts that are like we have the best service guy here, you know--(laughs) so it is really a competitive advantage for us. I would pretty much sum it up by work hard, play hard.

According to learning and development manager Rob Erickson: "It's informal, but it's fairly competitive and high-performing as well."

In the words of PDP lead Matt Chen:

BCD, is a really young organization and everybody moves really fast, you know. You're expected to perform at a very high rate and high level and not given much time to always think about what the proper answer is, but we take a lot of risk, because you're expected more to make an estimated guess, or use best judgment and get it [done] quickly versus necessarily getting it exactly right every time.

In the words of Jaycee Beckham in marketing:

I would say it is competitive. It's kind of a work hard, play hard culture. It's a fun culture, absolutely, but it's very fast. When I say fast, we've got a small team here,

so we're a bigger company, especially in the area, but we've got small groups of people working on big projects, so it's fast in that other companies I've worked for, you have to wait, you can go through a layer of maybe 10 people to get approval or to get something done, and at BCD, you just do it and get it done.

Marketing department employee Sara Wilson, described the culture as "Extremely competitive, very aggressive, and just kind of a way. Everybody has this thing that's called a safety ratio, and it's more about what you can get done than about what you say you can get done." Kris Russell in purchasing described it as "It's very competitive trying to get to that next level, you know you're trying to do better than the person next to you, and trying to advance quicker than they will." In the words of a manufacturing engineer, "I would describe BCD as being very male oriented, very competitive, very type A driven."

BCD had a young, fast, and changing culture facilitated by broad-based engagement in decisions. According to the manufacturing manager Steve Whiting, part of the pace of culture had to do with a willingness to take risks, and an culture towards ends rather than means:

Well, it's a difficult question because it's 4-5,000 people that make up BCD but the culture of BCD is very much a get things done type of culture and where results matter so, we tend to focus a lot more on the destination than the process of getting from here to there. I guess what I would say is we view the process or using the procedures around here just as a means to get to the end and so we will change things to accomplish what we're trying to get done as we need to do and

we don't use the procedures or processes as excuses not to, and so typical examples would be as we're getting ready to launch a new model or new features on a current model, the normal development process that we have which is we do a certain amount of criteria or benchmarks or timing and things like that that you need to get done and sometimes that will happen, and it's the pieces that will not happen, we'll make exceptions to be able to mitigate the risks and go forward but we won't use that process or the written procedure requirement as an excuse not to get the result done.

Company 3: A Diverse Group Collaborating to Compete.

Company EFG is a widely diverse company, often defined by its employees in terms of being many small companies as much as a large single company. This diverse nature was reflected in the responses which were largely distributed across a range of responses, encompassing collaborative, competitive, family-like, formal, and process-driven. But in terms of total mentions, a single category outpaced all others: collaborative. Despite the overall firms' broad and diverse nature, the thing that stood out most to participants was the collaboration in the firm.

According to L&D strategist Katie Alford:

The way that we're organized is that we have 5 business groups, which if you were to take them and carve them off, out of EFG, businesses within those business groups could be their own company. And be multi-million and -billion dollar companies on their own. So we have this organization of sorts based off of each kind of I'll call it market types or even business models to some degree.

To learning and development expert Wayne Sanders:

It is a combination, that's the thing that I think is telling about a company like EFG is really we're a company of companies; we have an array of different arenas that we play in, so it's hard to be able to say anything that's perhaps unilaterally true. I think for awhile there, we were more focused on mergers and acquisitions as a way of growing the company, but I'd say efficient operations is one of the things that has been true of EFG for a long time. Focusing on operational excellence, probably our emphasis on six sigma in the not-too-distant past is something that was geared toward helping promote that even more. But the piece that I think is going to be true for almost company these days is to be cognizant of the employees you have and the value they provide, so the human capital type of planning, employee development, leadership pipeline that you have, I think are all going to be important elements for what will contribute to the success of an organization, so I think it is a mixture.

Wayne Sanders continued: "I would definitely say that collaborative aspect is very vibrant and an important success factor."

To knowledge management manager John LeMonde, "It's a collaborative culture more than anything else."

In the words of a Chief Technical Officer:

I think within the R&D community, I'd say it's collegial and collaborative and I think they try to share that information, and depending business unit to business unit, the business unit that I'm in right now actually is an extremely collaborative

business unit, it's a smaller business unit, but it's celebrating its 80th year and it's been a separate business unit within EFG and its manufacturing centered, in other words, most of our employees are in our manufacturing operations, and those can, because I've spent part of my career in manufacturing, and part in R&D, and my experience has been that *manufacturing environments often times give rise to people that are more collaborative and the reason being, is that when you're in a 24/7 operation, it's very difficult to not be relying on others to help you get your job done.*

Company 4: Driven by Operational Excellence.

Company 4 was described by all of the participants as being a process-driven culture. Moreover, this particular feature of the culture was the most talked about, garnering 12 mentions across 6 participants. To a much lesser extent, it was described as a formal culture, and as a siloed culture. To Vice President Ed Prokopowicz, this was a defining quality: "Our culture is really subdivided down sort of divisional wide, so the culture is very different depending on what part of the company you work in." These secondary facets of the culture seemed to be byproducts of the focus on process. Overall, the culture was extremely focused on process and operational excellence. Operational excellence was set by goals and metrics, lean thinking, and time and cost constraints. While the culture had evolved somewhat over a long period of time, it was largely formal and outcome-oriented as a means of achieving its success. To Vice President Ed Prokopowicz, the focus on operational excellence was intense and overriding, and really served to define the company:

You know, [the CEO] Don talks about the fact that last year, Company 4 as an organization missed their revenue targets by literally hundreds of millions of dollars, given the macroeconomic climate, given the fact we didn't execute, I mean a lot of different factors, but yet we met our earnings per share target--in fact we hit the high end of the range. Now why is that significant? It means that we did a great job balancing the middle of the balance sheet. And that comes from operational excellence, so we emphasize cost savings, we emphasize being efficient and effective operationally, and we emphasize that even with the people we hire. For instance, the people we hire into our divisional president roles tend to be very good operationally as a general rule of thumb. They're not marketing focused, they're not sales focused. They have those skills but first and foremost, they know operations; that's their background, that's what they're good at, and I think that you know we send the very strong message, that in times of crisis, even when things aren't going well at the top, we can execute at the bottom because of how good we are in the middle. And I would say in general, 80% of our focus, or bent, or paradigm if you will, is very much an operations based look.

Learning and development specialist Miguel Gutierrez summed it up:

I would say that it's a very approachable but professional culture. I think we have a tendency of being very, very focused at the task at hand, and while still being pleasant to work with, I don't think that we are overly competitive or you know, gossipy or anything like that, but at the same time, socializing isn't sort of the

main focus, everyone is pretty committed to actually sitting down and making sure that the tasks and operations that we're responsible for all get done.

Senior Engineering Manager Carlos Abraxas echoed this sentiment: "I would say more of a driving culture. Kind of putting the objectives and goals [on things] and just putting a really high value on meeting the goals." Likewise to Program Manager Jacob Martinson, "It is extremely driven, tense. And it is very time time-driven, I mean you are driven to meet your timely goals."

Learning and development professional Chad Hammond, who had significant tenure with the firm, reflected on the firm's evolution over time:

It's just competitive because of the nature of the business, probably, and also the because of the siloed nature within the organization, where functions [are] kind of functionally competing to get somewhere, but are also orientationally competing against each other. There is a little bit of formality at the top, you know, but it has improved over time, it used to be very formal, very hierarchical but it's its better now.

Supported: Knowledge Management.

Operating in complex environments, perhaps it was no surprise that the type of knowledge a company maintained was not an either/or answer, but usually a both/and. According to VP Chris Fitzgerald, "Well interesting. I think it's an *and*. I don't think that at ABC we sacrifice one for the other." Companies usually did not depend solely on *documentation* or *folklore* or *tribal knowledge*, but frequently used softer channels such

as *know-who* to connect novices to the resources they needed, whether these resources were embedded in *tacit knowledge* in the form of an individuals' expertise built up through many years of experience, or in the form of a *document* for which a novice simply doesn't know the number in order to locate the needed resource.

The majority of Company 1 and Company 2's knowledge was described as folklore or tribal knowledge. Many respondents preferred the term *tribal knowledge* to the more academically current *folklore* and often corrected me. Company 3's knowledge was generally split between the categories *documentation*, *tacit knowledge*, and *know-who*. The emphasis on *know-who* at Company 3 was significant and emergent.

While I anticipated that responses would fall into categories of documentation, folklore, or processes, the categories themselves were far different: a few respondents argued that it wasn't *tribal knowledge* that existed but *tacit knowledge* built into the individual's experience, becoming a lens which could not be shared with others. *Know-who* or *Networking* emerged as a significant category for managing knowledge, as several participants described the importance of identifying a knowledgeable individual as an adjacent to a document search, since document repositories or product life cycle management (PLM) systems are often so vast that you have to know *who* knows about the topic in order to identify *what* would be a necessary search. The category *Processes* largely fell by the wayside, as respondents collapsed *processes* into *documentation*, speaking of *process documentation* and *documented processes*.

Company 1, ABC, had far more folklore or tribal knowledge than other firms. This was described as both a dominant and valid way of communicating knowledge.

Paired with the overall longevity of careers at Company ABC, this seemed to be a sensible approach.

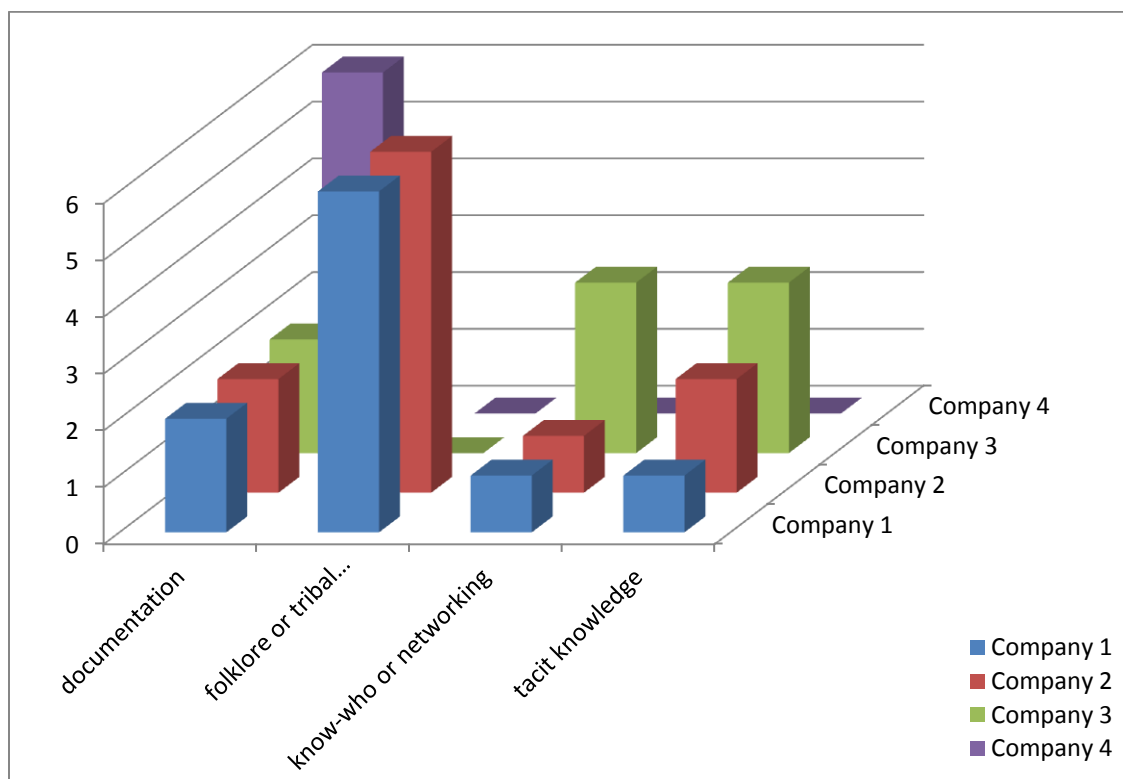


Figure 23. Knowledge management, responses by individual respondents.

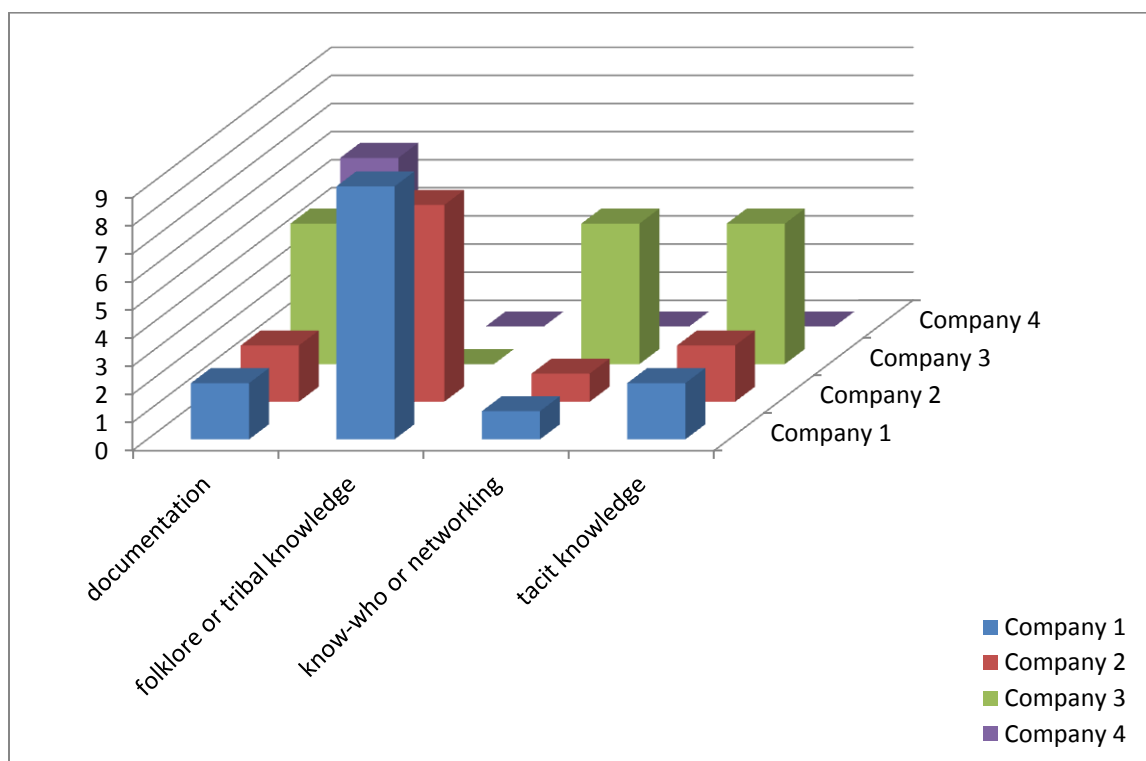


Figure 24. Knowledge management, total mentions.

Company BCD was a relatively younger firm, not only organizationally in the years since its establishment, but also in the ages of its employees. Also notable, company BCD is currently going through a significant growth phase. Documentation was described as being a recent focus, but employees described some difficulty in identifying who to contact in other departments to assist them with their cross-functional learning. Company BCD's process knowledge was primarily limited to production domains. Knowledge in realms such as marketing, HR, and OD was not process-driven, and employees in those functions expressed a desire to be "like engineers," ostensibly because of the increased process clarity.

Companies MED and EFG probably had the strongest reliance on documented knowledge. However, in the case of EFG, perhaps because they were earlier in the stages

of documenting knowledge, this reliance on documentation was not a reliance on documentation alone. There was significant discussion of the importance of knowing who to go to in order to more effectively search the documentation. Employee groups and informal meetings were very intentional and helped to facilitate the in-company network. At Company MED, employees lived and died by documentation alone, and participants went so far to say that if a thing wasn't documented, it wasn't done. In the words of an employee: "Process, quality, you know we document what we do, we do what we document, and this is what we hold people accountable to. If it isn't written, you know it's not done."

Company 1: Folklore and Tribal Knowledge.

ABC's organizational knowledge was described as being predominantly encompassed in company folklore. In the words of Vice President of Human Resources Gary Forman:

Folklore is the majority of it. We do maintain the engineering of the products. So the products are very well documented they're all in CAD models, the CAD models go through extensive data archival, that kind of stuff, so the intellectual property in the in the content of the product is very well grounded, very, very detailed, very replicable. Some of the knowledge about *why* we design things that way, there's things we used to do and we went away from it, those don't work, some of the reasons behind the *why* is more the folklore. So that's how I would describe that

According to Vice President Chris Fitzgerald:

We are not nearly mature enough on the knowledge capturing side within the organization. It is a combination of experience in people that are currently still with us, maybe historical lessons learned or anecdotes that people remember that get traded verbally, but just recently, in the last 5 or 6 years we have begun to get a lot better in terms of stored lessons learned and using some of the problem solving techniques to capture knowledge, so an A3 that you can essentially create sort of a DMAIC story on, is something that then can be used not only as a helpful problem solving tool during the problem resolution process, when you're done with resolving that and have a control plan in place, you can store that A3 and

people can reference that and what the problem was and how you solved it and how you're controlling it. Whereas at a lot of our NPD [new product development] projects you actually now do formal lessons learned. What did we learn during this project that was valuable and could be applied in the future? So, we're getting better. We're probably lack yet today, a lot of formality or discipline around taking a forty year veteran who worked with us his or her whole life and going OK, what do you know that you think we should put down on paper that could be valuable to the next generation of leaders or team members here? We don't do a lot of that. Probably need to consider, maybe even selectively, about where we do that in the organization.

This sentiment was echoed by Chief Financial Officer Robin Fitzpatrick:

So we get into the company folklore more than anything. And it probably varies depending where you look in the organization. When you get into some of the functions, though, it's probably not as well documented, and could be more so. I often hear, being relatively new, I hear, we've done that before, and we tried that and, but if you weren't here for the last, last 10 years, you wouldn't know some of these things, and they're more, they reside within somebody's knowledge base because they've been a long-term employee and I think that's probably a risk for us as an organization, so when you lose a person, you can lose a lot of helpful knowledge as well.

In the words of environmental health and safety engineer Jordan Hammond:

On the floor, I would say a lot of it is probably in their heads. We've got a lot of people that if you have less than 10 years here, you're new. So we got 20, 30, 40+ year guys here.

According to project engineer Tom Mencil:

I can't tell you it's all one or all the other. We don't like the company folklore, but there is a lot of it. We have guys with little scraps of paper in their tool boxes that have little--I'm trying to remember the term they use for that, there's a term--but everybody has his own little way of making that part, and they hold it pretty close, so you'll run into this problem where you can't figure out why the same part running in the same machine isn't coming out the same on all three shifts, you know. One guy always seems to have a better handle on it, and why? You have programs, you would think that when second shift comes in and takes over, it would just continue on, and then we find out that the guy on first shift that really has a better way of doing it, he wants to keep that secret. So at three o'clock in the afternoon, he changes his machine back. To run slower. We got that kind of going on and so. We try to document the best we can, we have our processes documented, and they're supposed to follow those processes, but we know that they don't.

According to Director of Operations Christine Roberts:

We probably have tribal knowledge, a lot of tribal knowledge in this company. We have tribal knowledge if you talk about the supply chain of corporate, the master scheduling planning that we do is really tribal knowledge-ly based. Any

time you have, you run a business off of excel spreadsheets, which we do, I think you're probably more towards the tribal knowledge. I do have a CI background, and I think that what's interesting to me is we want more written documents, more standard work, and we create it, but people don't use it.

Company 2: Process Documentation in Operations.

BCD is in the middle of a dramatic period of growth, and as a result, is in the middle of a period of transitioning knowledge processes. This growth and expansion has led to the documentation of operations and production processes. Yet, some challenges remain with knowing where to locate information, or who to turn to in order to identify key information. And because of the focus on documenting operations, employees in softer skills areas seemed to feel some neglect.

According to manufacturing manager Steve Whiting:

We're transitioning a little bit. I mean for a long time, it was essentially entirely the peoples' minds and in their heads and shared person to person, not always verbally, sometimes we would write things down and share it that way, but it was almost always be on a near-rised basis we would share it, that's really beginning to transition as we write more things down, we tend to get more standard approaches and *learnings* and kind of capture things like that, but that part of it is relatively new, and so it's taking kind of taking root currently and there are a number of things that, various pieces in place in the organization are working to foster to see that happen, with a certain goal in process because they're not as

natural or as frequent as we would like them to be, but it's happening. Today still, if you want to learn something about how we did it before, what the right way to do something is, the best way, whatever, you know you're going to find somebody to ask them, you're not going to go look up a document or a reference, you going to go find somebody to ask them.

In PDP lead Kris Christenson's perspective:

Currently, a lot of it's basically tribal knowledge, you know, you know the people that have been there for a few years certainly, I would say not necessarily understand it better, but get it and know how to get things done quicker or we're moving toward getting everything documented properly. In the last 2-3 years, we've done a much better job of documenting docs to access, the problem is, that information is not centrally located now, we still have to know where to go to get it. We still have nowhere to go to get it. But I know that's one of the big pushes that at least one part of our organization is looking at some sort of schedule-wise like a resource and project planning type data base.

In Apparel Product Developer Jaycee Burton's opinion:

I would say in our engineering side, it's very much documented, they have very good processes on these systems where they keep track of all of that. I would say though in things like HR or marketing, or things like that, then it's very tribal and it's not well documented. Unfortunate for my job, but, I think that's the way I think it is right now. I wish I was an engineer sometimes, they do a very good job of that.

This was echoed by Chris Campbell in marketing:

From my perspective I feel like most of the front-end sales and marketing aspects are much more tribal knowledge than like an engineering process where they may have a document or a specific procedure to follow in order to get through a situation.

His colleague Sara Wilson was of a similar opinion:

Folklore. Yeah. (laughs). Very little documentation unless you're within the operations group. It's hilarious because especially now, as we're growing, everybody's just like, who do you know who can do that? There's not, there's never a process for anything. And it's tons as we're growing too--who even works in that group? Do you know anybody's name in there anymore? Where 5 years ago, you know everybody's name and what they did, and who you went to for everything. And now there's so many people, nobody really knows who to go to.

Company 3: Connecting Know-Who with Documentation.

While Company EFG had a more mature documentation process than company BCD, documentation was not its sole focus. Knowledge management efforts were in many ways viewed as a balanced effort between *know-what* and *know-who*, or ensuring that employees in the organization would have the contacts they needed in order to put them in touch with the relevant information on an as-needed basis.

Company EFG 's documentation process encompassed not only production processes, but human resources (HR) processes, as well as other categories.

According to Knowledge management Manager John LeMonde:

Process knowledge will apply to any, any, any action; let me say that in even a perhaps broader way, the clarification and standardization of process knowledge is one that is [occurring] any time. The first time that they pilot, once we learn that it works and there is a real benefit behind [it], then we tend to standardize, and then at that point, the process is documented in as much detail as possible so that that becomes available to everyone in the organization.

In the words of Zara Marwick from UK operations:

There's definitely a lots of folklore, there's a lot of good stories, but I think certainly over the last few years, they have made strides to capture that knowledge that we've got and [put it in a] repository of all of our technical information. I mean there are hundreds of thousands of documents already, it's huge and it has everything from, from technical reports back from like 1925, to all [the] stuff

people are doing today, so I'd say probably more written into documents now but a lot of it is maybe people navigate those documents through the communication with other people. There's a lot of the time you have a question, what normally happens is if I have a technical question I read it or post it on our kind of technical social media, and based on that, somebody will go oh, I know, you should talk to Gary in engineering or whatever, or you should talk to Steph in the US, and then I'll get in touch with that person and they'll go oh, yeah, yeah. What you need to do is you need to look on this repository and you need to use this key word, and then you'll need, so it's you kind of a combination really, of communication between people and then ultimately leading to documentation.

The theme of connection and building an internal network was significant. Wayne Sanders from leadership development suggested:

I think one of the things that stands out, and it's probably a bit more pronounced in some portions of the company as compared to others, my strongest touch point would be with the technical community, I think that would be one where I would definitely say that collaborative aspect is very vibrant and an important success factor. There is if you will, folklore, and I'm not sure if that's the best way of describing it, but that you can get connected to somebody that will help you with your query within two phone calls. So it's like if the person you initially contact doesn't seem to be able to give you assistance, they'll connect you to somebody who can, so there's a lot of it that's networking going on, and I really sense that it's one of the things that make EFG the company it is today because of the

collaborative aspect of it. Well, I think that was the other thing maybe that I'd layer on top of it is that experience is also something that's a critical element as well, we certainly have people who have been with the company for 25, 30, 35 years, and through that, you build up a pretty impressive network, so I think for somebody coming into the company, the challenge is to work at building your network and coming aware of where there's other places within the company could provide assistance. And that unfortunately doesn't happen overnight, that does take time.

Chief Technical Officer Don Atkins offered an interesting perspective:

We certainly aspire to have so much of it reside in the processes that we establish, I mean where we can, we aspire to be more process-driven but especially as organizations get larger, main businesses, our main positions, and that that's organizationally probably easier from a change management standpoint, by having it with processes, within the R&D community one of the mantras that most lab heads have is document, document, document so that we don't end up doing too much R&D on the research and reinventing stuff that's already been done before, so we share that with ourselves as well as with those who follow us in terms of our what we call our technical report system, but there is, I'm certain that you'll find examples of where it's maintained, just in terms of folklore or what I would call tribal knowledge is where it's maintained kind of in that group. You know my job is to say how much can we try and get that really documented, and what we know and what we don't know because of *the nature of tribal knowledge*

is you can get into kind of a groupthink mentality there so it's really, it's not really challenging what you know and what you don't know, it's oftentimes where those breakthroughs happen.

Company 4: Driven by Documentation.

MED had a documentation-driven knowledge management focus, which was in some ways came across as an almost single-minded focus on documentation. Program manager Jacob Martinson put it plainly: "It's definitely documented. It needs to be." Senior engineering manager Carlos Abraxas framed it this way: "You know the drill here, right? Everything's regulated, so everything we're doing we're following the pre-described SOP's [standard operating procedures]."

To Environmental Health and Safety Manager Nate Carmichael:

The other thing about this business, and it kind of speaks to the process, and the quality aspects is that there is a level of bureaucracy here is, like none I've ever experienced before. I thought the airline industry was fairly regulated but coming here, it's another one of those mind-numbing things, how much time we spend on documentation and paperwork. Process, quality, you know we document what we do, we do what we document, and this is what we hold people accountable to. If it isn't written, you know, it's not done.

Later, Nate continued about organizational knowledge:

I think it's in processes and in the documents. You know there is going to be some tribal knowledge out there, but for the most part, people do what they do because that's what the procedures say. That's what the documentation says, and departure from that gets you in trouble.

The learning and development team added a bit of nuance to overall focus on

documentation.

To Learning and Development specialist Chad Hammond:

It's a tricky question, the reason that I say that is, the majority of the codified knowledge is already out there. It's stored in a known system, but the challenge is one of the transferring of that tacit knowledge or the stories and this and that. I think much of the critical knowledge in terms of parameters or known design document is stored in IT systems, that's not a problem, but in terms of the experiences accrued from using those, in terms of the knowledge that was gained over time, that wasn't stored, and it doesn't even get transferred sometimes because you run into many situations where one can't answer why something happened. You know? And that is a typical example of a knowledge gap. Something was done 20 years ago, but the people who did that didn't might have transferred it to the people who worked 15 years ago and when the people who worked 15 years ago might have transferred but in the process, people have left. And there was a lot, there is a lot of turnover, but there is no process of capturing that type of knowledge and externalizing, disseminating or storing it in some way and so I do a lot of projects, for example, a lean sigma type project you know where you run into a situation where you obviously see that there is some opportunity for improvement in a certain process, but no one can explain why a certain requirement is in place that increases the process cycle time by X number of hours, and the people who put that in place are no longer with the company, and the people who are there don't know why, and the people there then didn't

know why and the people who are assembling the products don't know why. And so especially when you run into a situation where you have a lot of turnover in your process or in your business in your manpower, you run into a situation where knowledge is constantly and continuously lost, and so *I think the transfer of knowledge is pretty much dependent on the stability of the manpower, or the stability of the workforce within that knowledge group, your functional area.*

Miguel Gutierrez echoed his colleagues' sentiment:

I would say that most of it would be written into processes and procedures, that's the big focus of a lot of peoples' jobs, but also a lot of it I think just lives with particular individuals; oftentimes kind of the best way that I find to make progress is to find the person that really owns it and knows a particular process very well, and just learn from them but I've found myself becoming you know one of those folks within the organization as well as someone who really knows this learning management system that I primarily support these days. So, it lives partially what's been codified into procedures but lives there, a lot of the rest of it and a lot of the day-to-day type activity that hasn't been put into those procedures is with particular key individuals within the organization.

Supported: Engagement.

Engagement was a category that emerged from the data. Although the forms of engagement varied widely, employee engagement seemed to be a significant *missing key* in understanding organizational learning. While *engagement* has typically been viewed from the perspective of being an individual-level construct, defined variously as:

- "harnessing of organization members' selves to their work role" (Kahn, 1990)
- "an individual employee's cognitive, emotional, and behavioral state directed toward desired organizational outcomes" (Shuck & Wollard, 2010, 15).
- "the individual's involvement and satisfaction with as well as enthusiasm for work" (Harter, Schmidt, & Hayes, 2002).

This study proposes that like any essentially social phenomena, *engagement* not only can be looked at from the individual perspective, but perhaps more profitably, can be examined from the neglected *organizational* perspective. While *engagement* is often viewed as the encouragement of an employee to plug in to the larger mission of the organization and harness their energy to contribute to the bigger picture, the flip side of the *engagement* equation is that on the organizational side, organizations are actively attempting to engage employees. Ironically, even though the *social exchange* perspective has been applied to *engagement* (Saks, 2006), this perspective has focused on the employee. Rather than asking "What is the *employee* doing to engage with the organization?" perhaps a better question is "What is the *organization* doing to engage the employee?" Given that *employee engagement*-- when viewed through the lens of *social*

exchange--may be understood as efforts that an employee gives back to an organization in exchange for receiving tangible and intangible gifts from the company; viewing *engagement* from the organization's perspective seems to offer a significant benefit.

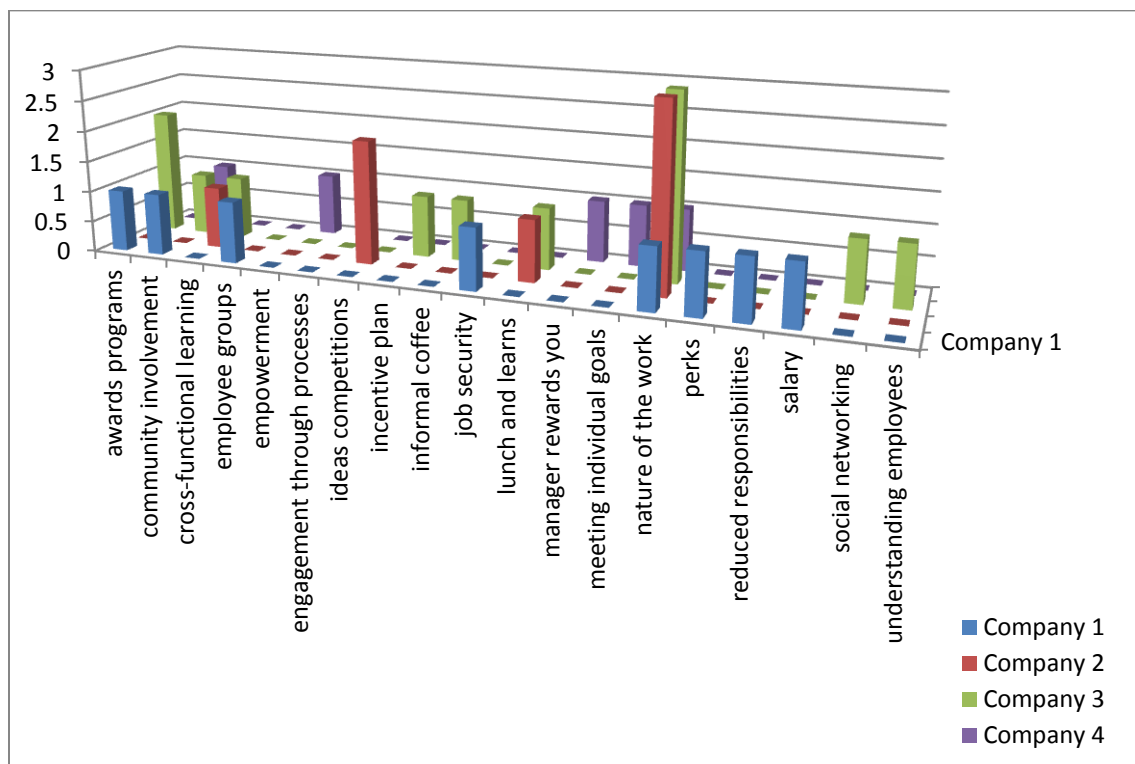


Figure 25. Forms of Engagement, by person.

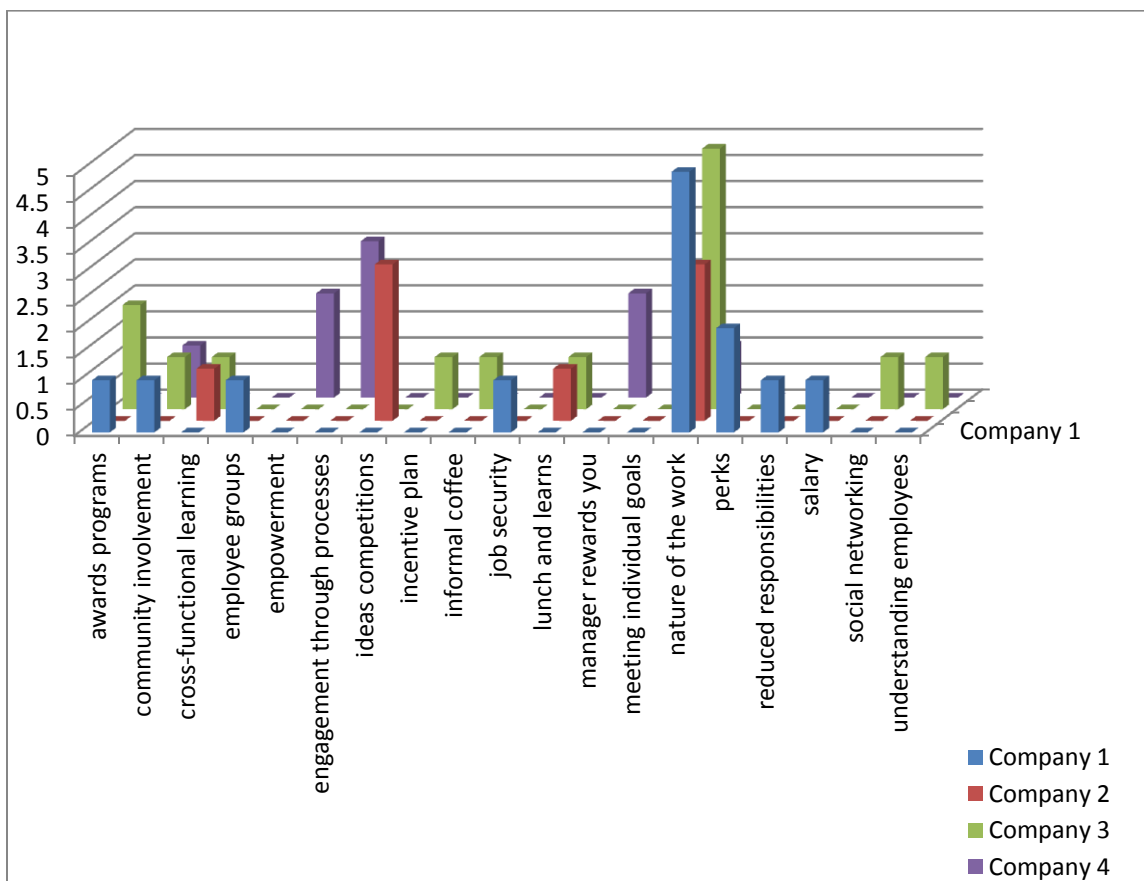


Figure 26. Forms of Engagement, total number of responses.

The Oxford English Dictionary traces the term back to 1661, and defines *engagement* as: "The *action of engaging*; the state, condition, or fact of being engaged; *the fact of being engaged* in any occupation." It is by this definition, rather than by many of the various academic definitions, that employees seemed to define the construct of *engagement*. This original definition of *engagement* seems to have allowed more focus on the employer side of the equation than do the currently narrow definitions. And while the specific engagement activities varied by institution, engagement was cited as a key factor throughout the organizations sampled.

Company 1: ABC Engagement-Building a Community.

The mentioned forms of engagement at Company ABC were diverse. Categories included awards, community involvement, employee groups, and the nature of the work, as well as a significant number of hygiene factors including job security, perks, reduced responsibilities, and salary. The nature of the work was mentioned most often (five times), while participants at this company mentioned a number of categories that were not mentioned in other companies, namely reduced responsibility, salary, and perks.

Some significant examples of ABC's engagement included employee lunches, an annual *owners day*, for employees, and company-sponsored time spent volunteering for the community. The aim of ABC's engagement seemed primarily intended to build a sense of community, whether externally or internally. Arguably, this seemed to be related to Company ABC's overall emphasis on human capital, and go along with its employee focus which was foreign to many other companies.

In the words of environmental health and safety manager Jordan Hammond:

I think that they [the employees] definitely get above average salary, they get above average benefits, there's a lot of little perks that I see here that that the employees get and being that I'm new, really kind of frustrates me, because when you see these guys who have been here for 20-some years, when you get something continuously, it doesn't become a benefit, it's just required, expected, and the last place I was working at there was night and day difference how they treated their employees compared to what they get here. And those guys were,

OK with it, they weren't super happy, but these guys you would think they should be super happy. Instead, you complain. I mean, we have an employee club here that uses money essentially from ABC and purchases lunches and does little things on pretty much a monthly basis, and guys have just grown to expect that. And we do an employee's day thing, and they put on a lunch and give away little prizes and things like that, and last year budgeting was tough, so we did it here, as opposed to off-site and there was [were] complaints, and it was like man, you could just scrap it altogether and save 5 or 10 thousand dollars if you're not going to appreciate it, so I think there's definitely a focus on employees.

In the words of parts manager Laurie McIntire:

I was part of a leadership group for a women's group here at ABC. That was good but then I think it got to be something that it was getting really big and we didn't have official ABC support to have it, and you know you can do it as long as it's a grassroots thing, and we did it but then we all got so busy that no one could, we just couldn't keep it going, and so lately we haven't done much but we did have a meeting from that.

According to engineer Tom Mencil:

Yeah, I actually help out locally here with Project Lead the Way. Are you familiar with that? It's a national organization and it was I think it was started by the AutoCad, or whoever owns AutoCad, I think there's another parent company that owns AutoCad, but they saw that, at even almost down at the middle school or grade school level that they just weren't focusing on manufacturing. And so they

started this national movement, it's called project lead the way, and locally in Fabmat town here, it started out in the high school and they've actually driven it down to about 6th grade where they start. They have classes, and they start teaching those kids. What they did was they asked for our support locally, so they seek out engineers at all the local companies and we come in and have a meeting every month, go to the high school and meet with the teachers, and a lot of times, there's kids there, and we'll talk about the projects that they're working on, and we'll give guidance to the kids, and every May, at the end of the school year, they have a final project that they do and they're graded by the engineers. So we come in and it takes a full afternoon, they have lunch there, and actually we start about 11, and then we each group, they're usually in groups of anywhere from 4-6 kids in a group, and they have to present their project in the auditorium, in front of all the kids and all these engineers, there's maybe 30 engineers, and the projects are really interesting. Every year it's a different thing. The one year, they had to design and build a prototype of a chair to be made out of cardboard, and they're given some parameters. It has to hold 200 pounds. I has to hold a 200 pound person. And they actually got research it, do the design, work up a manufacturing cost, so they got raw materials, they got to investigate shipping costs, and tell you what they think it will sell for. They do a business plan, it's kind of like being an entrepreneur. I tell you what, it was a blast to see to see some of the stuff these kids did. Most of them would do a really good job on one part of it and totally ignore the rest. You know, they have to build prototypes, so they had a thing

there. And some of their designs would have special features, like they would have a cup holder built into it, a laptop holder--they would have all these bells and whistles and gadgets and widgets and they could come in and we had a document we had to grade them 1-5 on their drawing, and how did you do on your drawing, on your business plan, of course your prototype itself. We go, you did really awesome on that but you know how are you going to ship this thing? Well, they always had a story. There's a few of us here, and a few at headquarters too, in project lead the way, and it's all about trying to get kids interested in manufacturing in general and engineering in particular.

Company 2: BCD Engagement-Competing to Win.

Company BCD was overwhelmingly described as having a fast-paced and competitive culture. This competitive streak also served as a primary means of engagement. Although the nature of the work was mentioned as a motivator by three participants, the annual ideas competition was mentioned by two participants a total of three times.

In the words of Chris Campbell, a front line marketing employee:

Here at BCD, there's a campaign for innovation every year, where anyone in the company can submit their ideas to the company and you know just [vote] or give kudos and say is this a good idea or is this not and the good ideas actually can receive funding and can receive the materials they need in order to make a prototype vehicle or um kind of see the validity of their idea.

OD Director Carrie McClosky clarified:

So our engineering group heads it up and they send it to everybody in the corporation, it's all through a website, and then everybody in the corporation can go into this site and vote for the idea that they like the best, so I like this and the one that gets the most likes, so there's like 9 million different ways to splice it you know. The engineering tries to extract information out of the employee base and so it's company-wide. They do it pretty cool. And with social media now, it's a little bit easier to do that, you know.

In addition to competitions, they also had user groups to speed internal learning.

According to learning manager Rob Erickson:

You know in the engineering world, they have some groups that meet and then the purchasing [group] does these lunch and learns, pick a topic where one of the peers will just take them through how you do this, we're getting more that going as we keep adding more and more new people, and in fact last week, Friday, I had a meeting with a grant where we kind of talked about that, [how do we] situate new people, really green, really coming up with very little prior knowledge, how do we get them spun up? What would be kind of a user group so to speak, way of getting them together, learning together, getting them with the right people, [to] that have that knowledge? We're still trying to figure that out, what's that best plan? But I love having our leaders thinking about that. Get the people plugged in right away so that they can learn as quickly as possible.

Company 3: Engagement: Building an internal network.

The forms of engagement varied widely at Company EFG, but what garnered the most mentions, far and away was the nature of the work. The forms of engagement at EFG varied widely, from career longevity, to employee groups for sharing knowledge, to formal recognition programs and awards, to global competitions, to time allocated for working on personal projects, all of the strategies seemed to be different means of promoting an internal organizational network. Perhaps the most significant form of engagement, being the activity on which the most energy was expended, were the technical forums--engagement in employee groups to facilitate know-who and expand dissemination of corporate knowledge and open sharing.

According to learning and development expert Wayne Sanders:

I think one of the things that stands out, and it's probably a bit more pronounced in some portions of the company as compared to others, my strongest touch point would be with the technical community, I think that would be one where I would definitely say that collaborative aspect is very vibrant and an important success factor. There is if you will, folklore, and I'm not sure if that's the best way of describing it, but that you can get connected to somebody that will help you with your query within two phone calls.

According to Chief Technical Officer Don Atkins:

But anyhow, to make that work because we do practice so many different technologies, we need to have open sharing, and then the bench to really identify

further overlaps and opportunities kind of this way to build up the network that's why we have a strategy called hire to retire. People used to think of that, in fact certainly when I hired in, it was lifetime employment, well, that's not really what's meant there. What is meant is we seek to get the talented individuals that we want and those that perform well, if they're continuing to perform well, we maintain them in our company until they do retire and have them have a challenging and rewarding career, approximately across the spans of their career.

In the words of marketing manager Rebecca Burton:

One of the things that's probably really important in some of these formal recognition programs, that at least I've found, is that some people are very uncomfortable with being recognized in front of a large crowd. And so, matching up their desire and how they're recognized with how you recognize them is probably more important than having those programs in place. So I've had those open conversations with my employees saying, OK, so let's just say you do a great job, how do you want me to recognize you? You want me to send you an email? That's a private thing. Is it would you like to be recognized in front of a large crowd? Some people would rather crawl under a table than be recognized in a large crowd. So, you know I think so some of it is just understanding your employees, not just that they work for you but how they want to be recognized, what their personal interests are, and how comfortable they are with those types of things.

According to Zara Marwick in the UK:

Certainly within technical we have we have some quite nice, quite fun competitions so we have done a demo competition that we submit demonstrations for and that's really kept fairly broad based. And then there's quite a few different awards, and generally they're often open to every level. Then there's an award called Circle of Technical Experts awards and they are basically global awards but we have UK winners, and then UK winners go off to the global competition. And there's individual awards and that's basically where people have gone over and above in a project and it can be quite broad, it can be anything from product development to eLearning, so it really is very broad, and I think every community has their own awards, so the marketing community does have an award and that kind of thing so it's again a healthy competition and from what I understand, it's quite fair, because anybody can enter, and anybody can nominate anybody else. So my marketing colleagues for example can nominate me for technical or vice versa.

A lot of emphasis was placed on the technical forums. According to knowledge management manager John LeMonde:

Perhaps the biggest peer system that we have to exchange information using R&D is called technical forum and everyone participates in that. Everybody that has an R&D designation in their job description participates, and there are not only organized semi-annual meetings but also at the level of subchapters, quite a bit of meetings, say on a monthly basis or ad hoc. All the other functions will also have

peer projects, peer associations or groups where occasionally they will meet, say sales and marketing, and stuff central for manufacturing and even sales.

Again according to Chief Technical Officer Don Atkins:

EFG employee groups that I've been involved in, there's a variety of chapters, and those technical forums are intended to be you can think of it as kind of like a rotary club, but it's more than that, it's really sharing and it's bringing in common. Maybe that's an outside speaker on a topic that's of interest to a larger number of functional areas so we have, it's a way for people to network and see what's going on, and share needs as well as what they've got that's going on and it's a resource and *so people go there and the goal there is to make connections because just like in your brain, your brain is only as good as your synapses, for connecting different parts together*, so this is a way to help to make sure that if there's a solution, over in one part of the company, that's one way for us to be able to make those connections and get that information there.

Company 4: Engagement through lean thinking.

While overall, categories of engagement such as the nature of the work, engagement through process, and individual goals were each mentioned by a single individual, the themes that people seemed to mention most were individual goals and ideas competitions, which in MED's case involved competitions to improve operational excellence. Given Company 4's overall focus on operational excellence, engagement

really revolved around the company's efforts to improve operational excellence.

Engagement often came through Six sigma green belt performance improvement projects, or through a single-minded focus on work.

To learning and development professional Miguel Gutierrez, it was about a close focus on the work:

You know I don't think we really have any formal incentive programs like that at this time, you know we recently reorganized as a company, so all of that is kind of coming back and getting looked at and I don't really think that we have anything actively running at the moment. I think it's just kind of day to day challenge actually. I think typically people here tend to be very, very engaged with their work and I think the intrinsic challenge and problem solving seems to motivate a lot of folks I talk to here.

Environmental Health and Safety Manager Nate Carmichael echoed:

The level of engagement is really driven by the fact that we have to make a quality product and so we have to have good procedures, a process to make that quality product, and employees are [a part of that], I mean there is a way you have to do it and a way not to.

Vice President Ed Prokopowicz saw the engagement as a natural outcome of professionalism:

I don't think they compete beyond the natural want and human need to progress and get better, but I do think that trust and empowerment are such powerful tools that it drives people to just naturally want to get better.

This engagement was more informal and ingrained in the culture, than actively rewarded. In learning and development professional Chad Hammond's words:

Your performance is usually project based, so if you excelled in one project or if you excelled in a particular business outcome, then you'll get rewarded. There's no universal measure for that, it's very subjective. Basically, it depends on your manager whether you get an award or not. It's mostly your manager that nominates you for any type of reward. I mean there are bonuses, obviously, for the people at the top, and those are based on business performance and are part of the compensation package but for the people at lower level, it's usually based on how your performance is perceived and compared to others in your peer group.

Summary

This study uncovered several significant surprises: first, it was discovered that controlling for industry is a foreign concept in industry, and likely an impossibility. Although I asked participants questions about their industry space, I quickly realized that the academic concept of "controlling for industry" did not actually make sense to those in industry. No two companies could be understood to compete in the same market space. Each company offered multiple product offerings, some of them dominant focuses of the company, others emerging. Each product type competed against different sets of competitors, sometimes at different price points, frequently across a number of industry segments, with each specific product presumably encountering different levels of *market turbulence*. While this result may be partially a function of the companies sampled, it also

may be an artifact of these organizations successfully preventing their product offerings from becoming commoditized and costing them market share. By pursuing an increased market space differentiation, these companies may be able to differentiate their brands as well as their products, retaining a higher level of value-added to their brands rather than competing solely on price point. Second, the theme of engagement strongly emerged, with many participants enthusiastically describing the many ways in which they were engaged with their companies and their work. Training was seen as just one form, among many, of engagement. The greatest number of participants mentioned being motivated by meaningful work. This echoes Herzberg (1966) who suggested that *work itself* could be a satisfying factor of work (Figure 27).



Figure 27. Herzberg's Satisfying Job Content Factors.

Several of the companies made significant efforts to make work meaningful for employees--including allowing employees time to pursue work projects of their choosing, facilitating internal transfers when employees become tired of a particular work focus, empowering employees to make impactful decisions in areas related to their own work, and making overall corporate strategies clear so that employees can see where their work fits in with the larger picture, so that they know where to best focus their own work efforts.

Many sub-themes also emerged, such as a company's focus on shareholders, which the literature had neglected. This focus on shareholders and short-term financial

returns was a driving factor at Company 4, and a significant factor at Company 3. As publicly traded companies, much of perceived corporate value was based on the quarterly ability to return a profit.

Overall, five dimensions of *organizational* were found to be significant: *company culture*, *knowledge management strategy*, *focus for growth*, *employee versus customer focus*, and *engagement*, with the latter category emerging from the analysis of participants' responses. Participants seemed to view training as a subset of engagement, leading to partial support of this construct. The emergent construct of engagement appears to consist of five dimensions, namely *broader community involvement*, such as volunteering, *training* in its various forms, *awards and incentives*, *internal competitions*, and *hygiene factors* such as salary, job security, and perks or benefits (Figure 28).

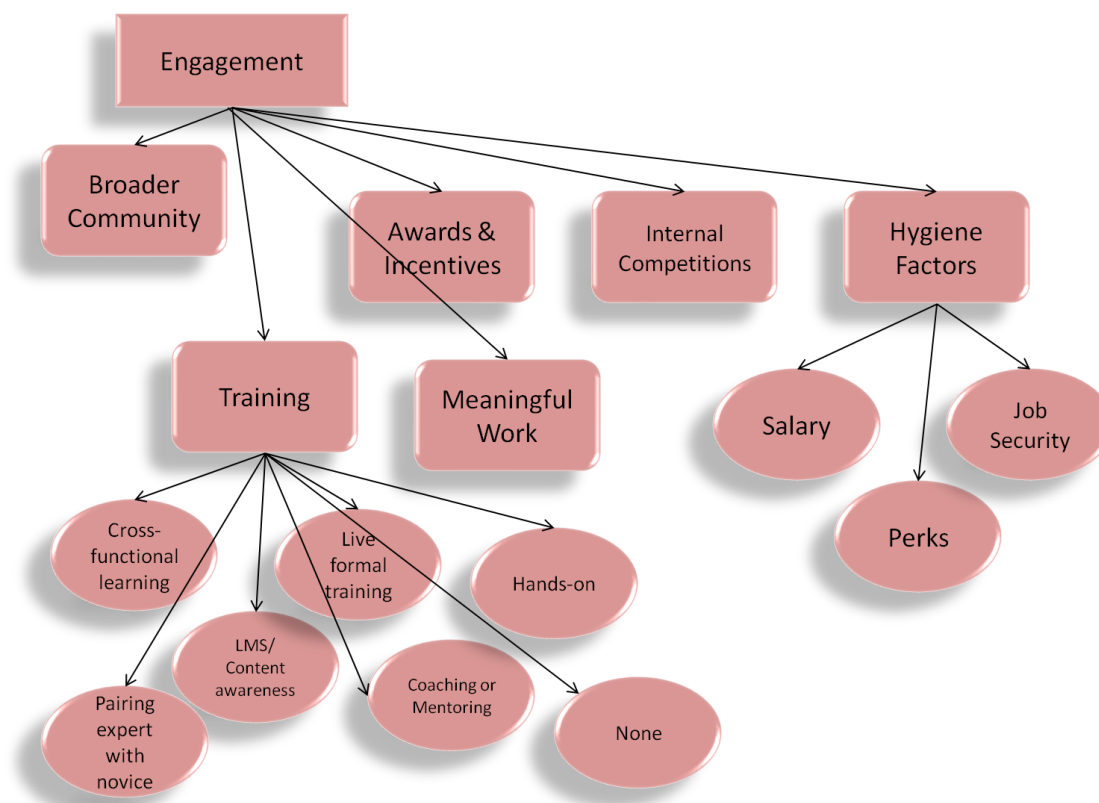


Figure 28. Facets of engagement.

Organizational cultures and approaches to learning seem to be influenced by past lessons from the environment. This theme was brought out strongly by Company 1, which had adapted to previous lean years by focusing on building relationships and embedding lessons in folklore, and continued with this strategy. Company 2 had been largely successful by being competitive--internally and externally, as well as by empowering decision making in a matrixed manner at the frontlines--and continued to pursue this strategy despite significant growth. Company 3 was broad in its focus, but significantly collaborative, even globally. This led to a focus on building social connections internally in order to bridge the gaps in knowledge management that

remained as documentation processes failed to capture significant tacit knowledge.

Company 4 focused extensively on process knowledge and documentation, which led to a blind spot regarding seeing the value of long-term employee tenure. Each organization seemed to have its own strategies for learning, based on past experiences, which made sense operating in their own particular market niche.

Chapter 5: Conclusions, Interpretations, and Recommendations

"The text has disappeared under the interpretation."

-Friedrich Nietzsche, *Beyond Good and Evil*

Summary

This study sought to discover how organizations learn from the perspective of those within organizations in order to answer the question: "What are the dimensions of the *organizational learning* experience?" (Richards, 2009). Although research into the topic of *organizational learning* can be traced back to the 1950's (Schulz, 2001; Spender, 1992), current *organizational learning* models are limited in three ways: first, they are based in *theory* rather than *practice*; second, they frequently reduce *organizational learning* to the *individual level*; and third, they focus on *external* factors, to the neglect of equally important *internal* factors. While research into the processes of organizational perception and organizational learning dates back to the work by Cyert and March (1963), still scholars have not found firm or adequate answers fifty years later. For example:

- What happens to information as it is processed through the organization?
- What predictable screening biases are there in an organization?
- What is the relation between decisions made by the responsible representatives and the final *decision* implemented by the organization?
- In what systematic ways are decisions elaborated and changed by the organization? (Cyert & March, 1963, p. 21-22).

While numerous survey instruments addressing the topic of organizational learning exist, none of the 50 instruments reviewed, which appeared in the 1,368 peer-reviewed papers in the initial literature review sample, were developed based on direct research in organizations. Instead, they codified theoretical models which may or may not accurately depict real-world organizational learning conditions. Because these models rushed to the validation phase before checking to see whether the presumed dimensions exist, it was previously unknown whether the dimensions of learning listed in research were accurate, or if any unknown dimensions had been missed.

It was hypothesized that significant corporate culture differences could be traced to differences in epistemology. The study of epistemology is one of two branches of metaphysics; and the study of metaphysics is one of four branches of philosophy.

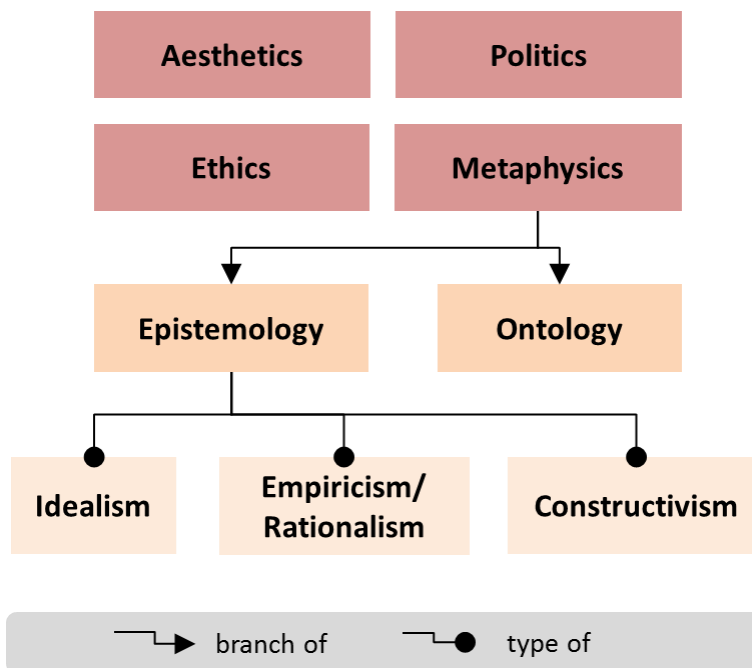


Figure 29. The branches of philosophy, including epistemology.

Further, it was postulated that corporate epistemological differences fell into three broad categories including Empiricism/Rationalism, Idealism, and Constructivism (Jayanti, 2011; Miller & Lin, 2010; Stacey, 2007). Moreover, it was conjectured these three categories could be understood in terms of a triadic semiotic framework (Burch, 1991; Pierce, 1868; Van de Ven & Poole, 2005). As such, it was posited that there would be three broad epistemological approaches that would mediate corporate decision-making and organizational learning. Like the lenses in an individual's pair of glasses, an organization's epistemology may shape *how* an organization perceives and interprets data from its environment, *how* they order the data, and consequently, *where* the organization ends up. Semiotic approaches have been applied to a wide range of fields from advertising research, to the study of aesthetics in art, to cybernetics, and industrial design (Bouissac, 1998), and it was believed that semiotics might be an appropriate framework for understanding organizational learning.

While a framework was presupposed prior to initiating research, unlike in the case of five factors personality traits research which has come under significant criticism for lacking a basis in underlying theory but merely emerging from a seemingly accidental empirical finding of clustering from factor analysis (Eysenck, 1992), this framework was bracketed while conducting fieldwork according to grounded theory method (GTM), utilizing Strauss and Corbin's approach. In other words, this study was not *atheoretical* even though it utilized a grounded theory approach. Grounded theory was selected as an appropriate methodology because of its shared philosophical roots in *symbolic*

interactionism, which it was assumed mediates this study (Fendt & Sachs, 2008; Skeat & Perry, 2008).

Research proceeded by semi-structured interview of participants, which was recorded with their permission, transcribed verbatim, scrubbed of personal and organizational identifiers, and loaded into Nvivo. Transcripts were then coded utilizing a four pass process of open coding:

- **1st pass:** open coding to determine themes from transcripts
- **2nd pass:** open codes broken down, categories clarified (*decision approach* becomes *consensus, top down*, etc.)
- **3rd pass:** recombining overlapping themes (i.e., *cross-functional learning, hands-on, experimenting, learning from peers* re-categorized as forms of *informal learning*)
- **4th pass:** un-coded themes at nodes where participants appeared to be talking outside of their own personal experience to ensure strongest possible results

Axial coding was then used to put the results back together into categories and better understand the process of organizational learning in order to better answer the original question, "What are the dimensions of the organizational learning experience?"

Conclusions

Based upon this study, we can conclude that *organizational learning* is best understood as a process of change and becoming (Figure 30). *Being*, or how an

organization is, frames how an organization views the world, what data from the environment the organization perceives as relevant for decision-making, and what actions are assumed to be appropriate within the context. *Company culture* may be understood as the *organizational epistemology* made visible through tangible corporate practices. While *organizational epistemology* may underlie the construct of *company culture*, firmer conclusions about *organizational epistemology* cannot be drawn from this particular sample. *Organizational epistemology*, of itself, is less tangible and hence more difficult to study. From this investigation, I get the sense that *organizational epistemologies* may have a close interaction with lessons that companies learn from the competitive environment, whereby the *epistemology* subtly shapes the interpretation of events, while the events also subtly shape or alter the *organizational epistemology*, and that these preceding factors eventually impact the more visible practices in the *company culture*. Further investigations of *organizational epistemology* may be possible and beneficial for bridging the theory to practice gap.

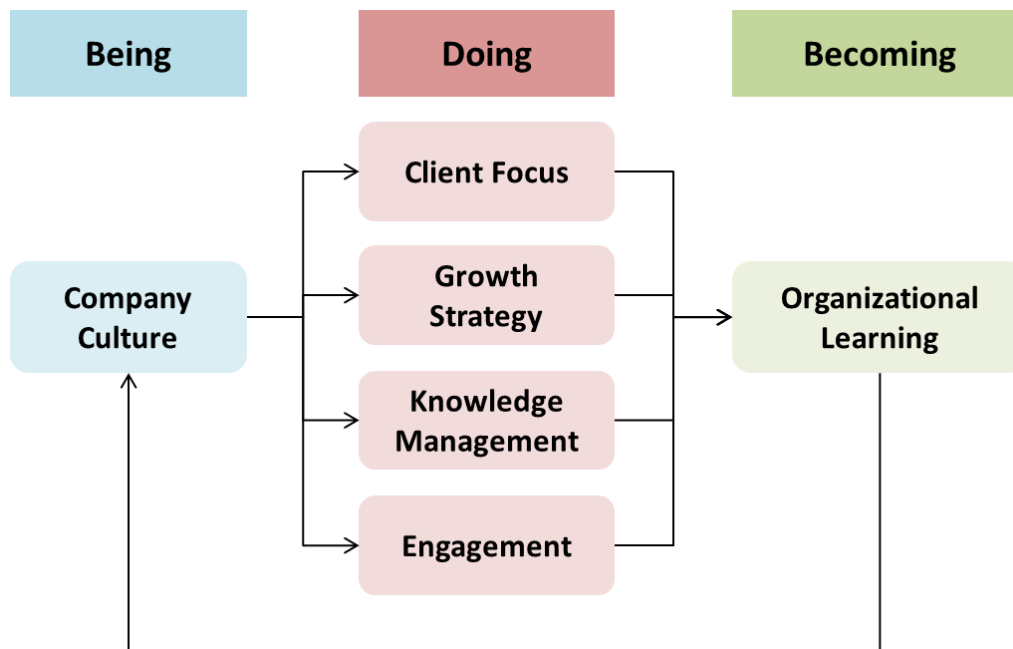


Figure 30. Process of Organizational Learning.

Company culture is a way of *being* which is deeply ingrained in the psyches of employees and subtly shapes the strategies, processes, and interactions of the company in its environment. Indeed, *company culture* frames is the most significant factor, both preceding and shaping what actions an organization takes. For example, *company culture* frames organizational approaches to *knowledge management*, its *growth strategy* shaping its strategy, *forms of employee engagement*, and *client focus* (**Error! Reference source not found.**). To answer Cyert and March (1963)'s question, "What predictable screening biases are there in an organization?" it appears that *company culture* serves as a predictable screening bias within organizations. *Being* in the company culture precedes *doing* dimensions of *organizational learning*--that is, dimensions of *organizational learning* where the organization intentionally carries out plans or programs.

What an organization *does*, or the actions which are taken in the process of *organizational learning*--are ranked in order of importance in the *organizational learning* graphic (Figure 30), with *client focus* or the primary client served by the organization, as a primary determinant. For example, companies look very different when they are primarily serving the *shareholder* rather than the *customer*, and may focus on profitability or other bottom-line metrics more than product development or useful services which do not meet shorter-term financial metrics.

Growth strategy, or a company's strategy for future growth, may be driven primarily by formal *documentation*, or informal building of stores of *tacit knowledge*, built from individual experiences. This *tacit knowledge* may be held by individuals, shaping the lens through which they view the world, and may be difficult to share with others. Nevertheless, some part of this information may be informally shared through *tribal knowledge* or *folklore*. The un-shareable portion of *tacit knowledge* may also be connected back to others in the organization through *know-who* or *networking*, where others within the organization learn who to go to for particular intangible information which is not in the documentation, and likely cannot be shared directly with others. Finally, how an organization engages its employees, through employer-side engagement practices such as *training*, *internal competitions*, *hygiene factors*, *awards and incentives*, *broader community involvement*, and *meaningful work*.

The action-oriented or *doing* dimensions include *knowledge management*, *client focus*, *focus for growth*, and *engagement* strategy from the company side. Together, the *being* and *doing* factors shape the firm's *organizational learning*, or its *becoming*.

Organizational learning helps companies to adapt to shifts in market demand or the competitive environment, and shapes the lens through which companies perceive the competitive environment. Ultimately, what an organization *learns* shapes what it *becomes*. Lessons from the environment become deeply embedded into the organization, shapes norms and assumptions, and influences practices and routines. Past lessons learned have shaped *organizational culture* to make it what it is today, while current lessons are likely to shape the baseline *company culture* into the future, feeding into a culture and learning cycle that serves to produce clearer and clearer distinctions between organizations over time.

Although this study was a qualitative study, and as such, lacks a statistical sample size from which to draw results, and selected a purposeful sample of organizations involved in *organizational learning*, it appeared that national differences did not seem to impact participants' responses so much as *corporate culture* does. Significantly, UK-based Zara Marwick's answers did not significantly differ from her US-based counterparts. Other participants such as Alex Bloomberg, who had transferred to US-based locations from other countries did not differ significantly in their responses from their native-born US-based counterparts. Responses were similar among a company's employees regardless of their location. Although initially surprising, this qualitative finding fits with a previous study of 759 companies which suggested that *corporate culture* is a much more important driver of innovation than labor, capital, government, or national culture (Tellis, Prabhu, & Chandy, 2009). Interpreted within the framework of *social identity theory*, which was an attempt to move away from individual-level

definitions for collective phenomenon, this conclusion makes sense because as people are involved in collective actions such as work within an organization, they may be more likely to identify strongly with their corporate identity which has more immediacy at that moment than alternate national or other identities. Understanding *company cultures* as a valid *culture* to investigate in a rapidly globalizing world may be more significant than studying *national culture*, since there is a dearth of research in this area.

Research Contributions and Implications

This study makes several contributions to the research community. First, this study answers the question, "What are the dimensions of the *organizational learning* experience?" (Richards, 2009). This study found that there exist five dimensions of *organizational learning: company culture, knowledge management, client focus, focus for growth, and engagement* (Figure 30). Although 50 dominant organizational learning survey instruments were closely reviewed in terms of purpose, sample size, number of dimensions, and previous work the survey was based upon as an adjacent to the literature review, none of the 50 organizational learning survey instruments appearing over the past 30 years was based upon preliminary workplace data, instead being shaped by theoretical models. As such, knowing the dimensions of the *organizational learning* experience as it is for people in the workplace may be invaluable.

First, there exist clear differences in *company culture*. Company 1 was very people-centric, and this showed through almost everything that Company 1 did. Jordan Hammond, a newer environmental health and safety manager, opined, "You're still

around guys and machinery and equipment and stuff like that right, but you feel like people, it's family." To Vice President Gary Forman, it was almost self-evident, "It certainly has a relationship base to it, right?" To CFO Robin Fitzpatrick, there was a caring aspect to the culture. "I think it is a culture that wants people to succeed."

In contrast, Company 2 was described in terms of its competitiveness, particularly in terms of the company being *fast*. Several individuals used the word *fast* when asked to describe the company. To Chris Campbell in marketing, "I would say that the organizational structure and feeling here is definitely competitive, I would say *fast-paced*."

To PDP lead Matt Chen:

BCD is a really young organization and *everybody moves really fast*, you know.

You're expected to perform at a very high rate and high level and not given much time to always think about what the proper answer is, but we take a lot of risk, because you're expected more to make an estimated guess, or use best judgment and get it [done] quickly versus necessarily getting it exactly right every time.

To marketing professional Jaycee Beckham, being *fast* was a matter of practical consequence:

It's a fun culture, absolutely, but *it's very fast*. When I say fast, we've got a small team here, so we're a bigger company, especially in the area, but we've got small groups of people working on big projects, so it's fast in that other companies I've worked for, you have to wait, you can go through a layer of maybe 10 people to get approval or to get something done, and at BCD, you just do it and get it done.

Company 3 emerged as a *collaborative* organization. The term *collaborative* emerged as a good descriptor of a fundamentally diverse company. In the words of a Chief Technical Officer: "I think within the R&D community, I'd say it's collegial and collaborative and I think they try to share that information." To learning and development professional Wayne Sanders, "I would definitely say that collaborative aspect is very vibrant and an important success factor." To knowledge management manager John LeMonde, "It's a collaborative culture more than anything else."

Company 4 was described as being driven by *operational excellence*. There was an overwhelming focus on this operational excellence. To R&D Vice President Ed Prokopowicz, "I would say in general, 80% of our focus, or bent, or paradigm if you will, is very much [an] operations based look." This had some very practical implications. Environmental health and safety manager Nate Carmichael described the practical impact this way, "Process, quality, you know we document what we do, we do what we document, and this is what we hold people accountable to. If it isn't written, you know it's not done."

This was echoed by training professional Miguel Gutierrez:

Right now in particular I think *we're focusing a little more on not necessarily employees, but operations*, on really streamlining and making sure that we set all of our processes to who we need to be in the long term and making sure that our people are capable and aware of kind of where we're going.

While *company cultures* generally exhibited both primary and secondary traits, such as company 4 being primarily *operations focused*, but secondarily *siloes*, these

overall categories of traits were not limited to being either *formal*, *competitive*, or *family-like* as the literature presupposed. Instead, this study added the dimensions of being *process-driven*, *siloed*, or *collaborative*. By better understanding the full range of *company cultures* available in the universe, future researchers may be less likely to attempt to fit a square peg into a round hole in their research, and mold organizational data into shapes which it is not. Richer, more delineated studies with less distortion may result.

Second, by uncovering the dimensions of the *organizational learning* experience from the perspective of those within organizations, stronger *organizational learning* instruments based on observations rather than theory may be made possible. This study uncovered the dimension of *engagement* as a significant factor of *organizational learning* which was not previously mentioned in the literature. This concept of *engagement* was viewed from the employers' side, and entailed the things that companies do in order to engage their employees with their work.

The types of *engagement* generally varied based on *company cultures*. Jordan Hammond at family-like Company 1, described a social form of engagement: "We do like a employees' day thing, and they put on a lunch and give away little prizes and things like that."

Chris Campbell in marketing at Company 2, which was described as having a fast and competitive culture, described his engagement in a company-wide ideas competition: "I forget what they call it, but like a campaign for innovation every year, where anyone in the company can submit their ideas to the company."

In collaborative Company 3, learning specialist Wayne Sanders spoke of engagement through connection, "If you can point to somebody or if you can point to a resource or get people thinking about something beyond what they do today, that, I think again, is where the learning takes place." Company 3 seemed to host a significant number of events for facilitating this collaboration. Zara Marwick described a regular event this way: "We have a technical forum talk once a month, you know it's just like [a] lunch time learning kind of thing but we don't get lunch."

Nate Carmichael at Company 4 described engagement through processes. "So the level of engagement is really driven by the fact that we have to make a quality product and so we have to have good procedures." This matched Company 4's overriding focus on processes and operational excellence.

The employer side of *engagement* has been neglected in previous research. Yet, this is an interesting perspective. Employees serving as informants in their role as research participants felt that employer-side engagement was significant--so significant that they mentioned this aspect without even being directly asked. Understanding that *organizational learning* may be shaped by employer-side *engagement* of employees, and that effective strategies fit with the overall corporate culture, may further advance the state of the research.

Further, this study also uncovered several sub-categories of dimensions--for example, in the dimension that had preliminarily been entitled *employee versus customer focus* but was later updated as *client focus* to reflect its diversity, the majority of participants overwhelmingly confirmed *customer focus*, while participants at one firm

(Company 1) strongly confirmed *employee focus*. Participants of Company 4 focused on delivering for shareholders. They also mentioned the sub-category of *process focus*, which seemed to be a driver for delivering value to *shareholders*.

Members of Companies 3 and 4 suggested that *shareholder focus* would be a useful addition to the dimension *employee versus customer focus*, since there were sometimes situations under which product offerings might be desirable for customers, but did not meet the interests of shareholders. As publicly traded companies, these firms valued their *shareholders* as major stakeholders. Engineering manager Carlos Abraxas described the *shareholder focus* this way: "We're an organization that still believes in if you're successful but you've burned out everybody trying to be successful, then it's not acceptable, I mean ultimately you're still driven by rewarding *shareholders*." This sentiment was echoed by Don Atkins, "Ultimately I mean, we exist for our *shareholders* to be able to have an enterprise to invest in."

Since dimensions such as *engagement* and *shareholder focus* were not mentioned in the previous literature on *organizational learning* of the past 30 years that was sampled. A *process focus* of *organizational learning* focusing on *learning processes* (Garrido, 2009; Ng, 2004; Ortenblad, 2010; Treacy & Wiersema, 1993) has never been a dominant strand of discourse. These neglected dimensions may represent significant additions, indicating rich veins for further exploration. Just as miners tend to be more successful when not mining in shafts that are tapped out, researches may be more successful in their endeavors when exploring veins of research that are known to have potential, but have not yet been overly mined, resulting in diminishing returns.

This study also uncovered a sub-category of *organic growth* to describe companies' growth strategies. In the words of Vice President Andy Schmidt, "Those kind of things [i.e., M&A] have a significant disruptive factor to your culture if you're not very careful about it, so we tend to focus on *organic growth*." Although *organic growth* appears to be an obvious contrast to growth through M&A, this dimension was overlooked in the literature. Yet, growing organically is a viable growth strategy, and may be especially powerful in combination with a focus on human capital.

Further, this study added subcategories to the dimension of *knowledge management*. While it was hypothesized by researchers such as Kogut and Zander (1992), Nonaka (1991), and Mitchell and Meacham (2011) that *knowledge management* would take the form of *documentation*, *folklore*, or *process knowledge*, participants quickly recombined the sub-categories of *process* and *documentation*, suggesting that processes are documented, and represent a form of documentation. In addition, many participants preferred the term *tribal knowledge* to *folklore*, since they saw the information as being informally passed around a group, but not necessarily through stories. This information could be informally passed through emails, notes, demonstrations of how to do things, and other means. Project engineer Tom Mencil described it this way: "We don't like the company folklore, but there is a lot of it. We have guys with little scraps of paper in their tool boxes."

Another emergent sub-category was *tacit* knowledge--knowledge which serves to form an individual's lens for perceiving the world, and which impacts their performance, but which cannot readily be transferred within the company, and may build from

experience. This was true across companies. To Director of OD Carrie McCloskey, "Probably more on the engineering side and manufacturing side it's a little more history and in people's heads." To marketing manager Rebecca Burton, "I don't like the words company folklore, I think that it's tacit knowledge, it's knowledge that you have because of the experiences that you have behind you."

An additional facet of *knowledge management* that was uncovered was the importance of *know-who* or *networking*, which involves connecting the individual learner with the right person to supplement documented knowledge. For example, even when information is heavily documented in a learning management system (LMS) or product lifecycle management (PLM) system, it is often the case that you need to know the document number or keyword for which you are searching. This was common across companies.

Sarah Wilson in marketing described it this way:

As we're growing, everybody's just like, who do you know who can do that?
There's not, there's never a process for anything. And it's tons as we're growing too--who even works in that group? Do you know anybody's name in there anymore? Where 5 years ago, you know everybody's name and what they did, and who you went to for everything.

To Zara Marwick:

I'd say probably more written into documents now but a lot of it is maybe people navigate those documents through the communication with other people. There's a lot of the time you have a question, what normally happens is if I have a technical

question I read it or post it on our kind of technical social media, and based on that, somebody will go oh, I know, you should talk to Gary in engineering or whatever, or you should talk to Steph in the US, and then I'll get in touch with that person and they'll go oh, yeah, yeah. What you need to do is you need to look on this repository and you need to use this key word, and then you'll need, so it's you kind of a combination really, of communication between people and then ultimately leading to documentation.

Often, people who do not regularly work with a particular set of documents may have difficulty locating the document that they need because of this missing knowledge, and must ask someone in order to fill in these gaps. These additional subcategories enrich the state of the research.

Fourth, to answer Cyert and March (1963)'s question, "In what *systematic* ways are decisions elaborated and changed by the organization?" in the negative, this study appears to disprove Mintzberg and Waters' (1985) hypothesized notion of single *types* or categories of decision-making, namely *planned*-where leadership intentions are generally precise and explicit, *consensus*-where strategy comes from employees and emerges through consensus, and *process*-where leadership controls the process of making the strategy while leaving the content to those most impacted. In the industry sample, there were no hard-and-fast *systematic* differences in decision making processes, nor did clear decision *types* emerge. In the words of Learning and Development Director Rob Erickson, "Well, it's a good question. You know, you end up with a mix of some of those things."

To marketing professional Zeina Alsahnii:

I would say they definitely outline it and then come to consensus. So it's kind of the high level here's what you should go after, but a lot of the you know executional decisions are left to the people at the lower levels to figure out and come to a consensus to.

Don Atkins echoed this sentiment:

I think that the direction gets set from the top and goes all the way to the top of the corporation, but I think then there's opportunities for everybody to really get an opportunity to add input into that.

Zara Marwick confirmed this:

I think my day to day routine is what is very clear, I think the strategic I guess aspirations of the company are very clear, I think how you get to them is what is, well certainly in my role, is largely up to me, so there's I suppose quite a lot of freedom.

To parts manager Laurie McIntire, "I guess it depends on what the decision is. Of course, and how much money's involved." To production supervisor Ryan Dietrich, "You control through processes, but [it] leaves a little bit for us to interpret; what we always say is there's more than one way to skin a cat." Training professional Chad Hammond, "Day to day decisions, as far as I know I can make a decision in my role in certain things within the [scope of] broader policies and procedures."

Fifth, decision proactivity proved not to be a significant differentiator among companies, despite the item's inclusion in Miller and Freisen (1982)'s *futurity scale*.

Companies were fundamentally pragmatic in the way they made decisions. There was a theme of *plan as you can*.

This was captured by Don Atkins' statement:

I would say both are in there, our desire is to try and *plan as much as we can*, but you have to have a feedback loop, to adjust for where you're at because the best laid plans often time don't turn out the way you wanted them to.

This idea of *plan as you can* was echoed the words of Vice President Gary Forman "*Plan as you can*, and then you've got to react to what the market's doing." No company appeared to push more toward proactive decisions or more toward decisions adapted to the market environment. People did what they could, up to the point where market conditions took over.

Sixth, although Miller and Friesen (1982) and Porter (1980) posited that companies could be divided by their concern in producing *innovative technologies versus cost-effective technologies*, related to both risk-taking propensities and strategic approaches, this assertion was not supported. Again, companies surveyed were highly pragmatic.

To training professional Carlos Abraxas:

I find it hard to say for sure, we're on one end or the other, I think it's pretty solidly in between. It really is roughly 50-50, we've got a lot of activity to develop new products and particularly new brands of products but really it is also about recognizing that we've got to sell them.

Some products started out as innovations, then scaled toward cost-effective with process improvements helping to squeeze costs down to price points. There was neither a hard-and-fast delineation based on products in the portfolio, nor within single products, which may start out as innovative and later become cost-effective.

To marketing manager Rebecca Burton:

Less than middle, so more in innovative technologies or producing cost effective technologies I think we tend to [aim towards]; it's an interesting company because I think we tend to produce technologies at any cost, but then as they begin to be more developed, its price starts to slide towards the right.

In other cases, highly innovative products might be produced in order to be able to enter a desired market space, or facilitate selling of a particular product.

Senior engineering manager Carlos Abraxas described it this way:

It might be a produce at any cost, but then that's going to be rolled back into an overall project cost that's evaluated against the potential revenue. So we're never going to do a project, that you look at it and you say, oh gee, we're never going to recoup the money, there's no market, and there's no request but let's just pump a lot of money into it.

Seventh, role clarity was not found to be a significant differentiator between companies--implying that role clarity may not necessarily serve as a key motivator for *organizational learning*. Questions of role clarity appeared in both in Kohli and Jaworski (1993)'s market orientation scale and Garcia-Morales, Ruiz-Moreno, and Llores-Montes (2007)'s absorptive capacity scale.

Participant responses ranged from apparel designer Zaina Alsahani's description of role clarity as, "Very, very broad but it's very clear what I'm expected to do, yes," to less clear.

Tom Mencil's description was illustrative:

We've been talking about that recently, and it leads to some confusion. Even amongst ourselves, we make assumptions that well, this should be your job because it's my job, it's part of my job, so it should be part of your job.

Environmental health and safety manager Jordan Hammond's described his role clarity this way:

I think in industry, in general, I don't think that there's a real clear thing, see I do health and safety, and so I cross into everybody's paths and certain things to them are my responsibility, and to me, certain things are their responsibility.

While there are exist clear benefits for information search knowing who to go to for particular issues, when an employee becomes known as the expert on a particular subject or issue, many successful learning organizations also trade off *role specific* responsibilities either to those particularly suited to the work, because an individual in a particular role may be too busy to handle the responsibility, or as a means of informally training a novice for positions at the next level.

Sometimes, shifting core job responsibilities to a novice is seen as a *benefit* of long tenure and a sign that the company values experience. When responsibilities are assigned via a competency-based approach rather than a role-based approach, clarity of who to go to for a particular issue may be significantly reduced. Company reporting

structures and even job ladders may also become less clear. Yet, companies using a competency-based approach to assigning responsibilities may in fact be using the competency approach as a form of employee development, suggesting that while high role clarity theoretically may be good, in practice, it is far less clear whether role clarity is a necessary ingredient for *organizational learning* to take place.

Finally, this study appears to contradict extreme conceptualizations of *knowledge turnover* which are presumed to be generally true. While Garcia-Morales, Ruiz-Moreno, and Llorens-Montes (2007) suggested that distinctions could be made between companies based on those which turn over their *entire* knowledge base every 3 years, and those which accumulated their knowledge bases over time, most sampled companies were innovative, but still built up their competencies over time. While *knowledge turnover* in three year sprints may be true of some companies trading primarily in intellectual assets, such as software, arguably, this seems less likely to be true of companies where physical components constitute a significant portion of product offerings. This presents a far different picture of *knowledge turnover* than has generally been assumed.

In the words of marketing professional Jaycee Beckham, "I think it's been building up, but a lot of it, we've gained a lot of momentum or traction in the last 3 years." To production supervisor Ryan Dietrich, "I think it's something that's been building over time, [but] there are some things that are new kid on the block." In learning and development professional Wayne Sanders' perspective, "I'd still say probably for us, more the building up of knowledge over time is probably truer, but I think it's shifting at least to some extent."

To marketing manager Rebecca Burton:

I would say it's interesting, because as I try and think about the improvements that we've had over time, it's not a continuum, there's some changes that happen, so we try something and it works, and so we continued to refine that, so I think that it's kind of new knowledge entering the organization but it's not necessarily new knowledge entering the organization from outside of the organization.

Innovative knowledge tends to build on prior knowledge, with current knowledge acting as a lens for interpreting the current environment, and serving to filter information which scaffolds future developments. Without previous knowledge, much innovation cannot exist. Arguably, innovation is like a tower of building blocks--the height of the tower cannot exist without a broad base of basic competencies underlying and supporting it.

This is significant because a strong belief in a three-year knowledge turnover cut-off was extremely widely held in management circles, and is encapsulated in many current surveys, including a large-scale multi-national OECD innovation survey called the *European Community Innovation Survey (CIS)* (Mairesse & Mohnen, 2010; Oslo manual, 2010). Knowledge turnover was presumed to generally apply to all industries; unfortunately, this may not be the case. To the extent that the questions being posed to particular companies are not relevant questions, the data resulting from such studies is not likely to be useful, no matter how large the sample size.

Recommendations for Further Research

Although I had considered utilizing Dubin's theory building methodology (1978) or other tools to build new models directly from theory, bypassing qualitative research, I am certain that I would not have come to the same conclusions if I had done so. While I may have covered the same terrain, this would be analogous to taking an airplane to a destination, rather than journeying by foot, when the experience of the journey itself is important. In addition, building models directly from theory may carry inherent risks. All 50 reviewed survey instruments on *organizational learning* bypassed qualitative investigations, and skipped ahead to the testing phase, assuming that personally held theories were in fact true in the field. This was not necessarily the case.

In my investigation, I found that much of the body of research investigating *organizational learning* evinces a distinct bias towards quantitatively testing theories, rather than qualitatively gathering data in order to build them. This is unfortunate, because large scale data sets may often mask significant gaps in the field's body of knowledge and present a presumption of complete knowledge where there is in fact comparatively very little known.

Overall, the practice of developing quantitative scales prior to conducting significant qualitative investigation may contribute to a scholarly *myopia*, whereby scholars focus on what is already known to the neglect of new information to the field. This *myopia* is not significantly different from the phenomena of *organizational myopia* which has been said to impede *organizational learning*.

This brings me to my first recommendation for research: I believe that it would be helpful to spark a conversation within the field of HRD about the value of qualitative research to the larger process of theory building. Arguably, qualitative research can be viewed as a means of *pre-testing* theoretical models and finding out what dimensions exist before expending significant labor testing models which may not work. An overreliance on essentially theoretical models covered by the trappings of large sample sizes may consequently lead to less effective practices both in research and in the field.

Second, the fact that *engagement* has been viewed primarily from an *individual* perspective seems to be a limitation of the field. Arguably, the construct of *employee engagement* may profitably be viewed not only from the perspective of the *employee*, but the perspective of the *employer* attempting to engage the employee. Participants frequently volunteered descriptions of the various ways in which they were engaged in their workplace, even without being asked. This may imply that participants were especially energized over specific employer efforts to understand and reach out to employees to ensure their work *engagement*. To participants, this employer effort was meaningful and a significant dimension of their *organizational learning* experience. As such, examining the *employer* side of *employee engagement* may be a particularly fruitful area to explore in the future. Further investigations into what *employers* can do to engage *employees* may be of practical usefulness to industry, and serve to improve any scale instruments which may result from *engagement* research.

Third, although the academic literature hypothesized that increased role clarity would lead to increased productive functioning of organizations, and questions of role

clarity were a center piece of both Kohli and Jaworski (1993)'s market orientation scale and Garcia-Morales, Ruiz-Moreno, and Llores-Montes (2007)'s absorptive capacity scale, the assumed power of role clarity to impact organizational effectiveness was unsupported. Although the sampled organizations were clearly exemplary learning organizations, I discovered that role clarity for employees was not always high. In practice, some tasks normally associated with a particular role may have been taken up by others in the organizations who have more talents in or time for a particular task, using a competency-based approach rather than a role-based approach. In addition, some firms break off parts of parts of other, higher level jobs to give developing employees a *taste* of real work at the next level for developmental purposes.

In the words of an executive:

We've taken junior managers and leaders and put them into what we call planning teams, and this is an opportunity where they actually meet with the executive team and get our guidance and then they build, based on the forecast and the budgets, they build the strategy to execute for the next business year.

In cases where work is assigned to the individual most skilled at completing it, or in cases where work is assigned to the individual who can learn the most from completing it, role clarity is likely to be much lower. While there are clear benefits to a competency-based approach, it is possible that there are trade-offs between role-based and competency-based approaches for assigning job tasks which need to be investigated further in the future. Whether role-based tasks are necessary to the smooth functioning of

organizations is debatable, and may benefit from further workplace investigations, particularly in workplace based studies where observations can readily be made.

Fourth, while this study did not conclusively either demonstrate or disprove the existence of *organizational epistemologies*, which are not directly empirically observable, further investigations into the topic might be warranted. Current research into *organizational epistemologies*, or what some scholars have called *organizational learning styles*, is in its infancy. Strong studies which investigate the phenomenon from inside of organizations may help to determine if *organizational epistemologies* underlie the *organizational learning* process, and shape organizational decision-making. Uncovering what specific *epistemological biases* exist at the organizational level may help to reduce *groupthink* and *myopia* and improve organizational performance.

Fifth, this study demonstrated the significance of *company culture* in understanding the overall process of *organizational learning*. While this in some ways confirms what scholars have already suspected--namely that "culture eats strategy," in Peter Druckers' words--it may be important to broaden investigations of *company culture*. While many academics have conducted wonderful sociological investigations of national and local cultures and sub-cultures, there is a dearth of similar research on *company cultures*. Yet, in a rapidly globalizing world, *company cultures* may significantly impact peoples' daily lives, even as the impact of national cultures fades. Coming to view *company cultures* as a valid *culture* to investigate may result in great dividends for researchers who seek to undertake this neglected vein of research.

Sixth, this study found that attempts to *control for industry* in a study--appeared to be a foreign concept to participants in this sample,. While the question of *industry* is deemed almost *self-evident* in the academic literature, and has appeared in many scales, most participants were confused by the question, since in reality, no two companies in this sample could be understood to compete in the exact same market space. Each company offered multiple products, some of them dominant focuses of the company, others emerging; some products high-end, some cost-effective, with each specific product presumably encountering different levels of *market turbulence*.

When such questions are posed in the form of closed scales, such as Likert measures, these communication gaps are likely to impede the collection of relevant, good quality data. Since many quantitative studies do not provide participants with the opportunity to provide qualitative feedback, it can be impossible to identify areas which do not match real world experience. Further, since many of these scales are developed by piecing together components or questions from other previous scales, the problem goes back and back, where each researcher may simply assume that the previous researcher has done due diligence, and that the question is valid. This assumption is clearly problematic, and has led to the enshrining of questions in multiple instruments and large-scale data sets that fail the basic test of *face validity*.

This finding was significant because not only do many management studies assume that industry can and should be controlled for in studies, but large-scale studies such as the U.S. Census Bureau's Economic Census and the U.S. Census Bureau's Survey of Manufacturers are based on this premise. To the extent that industry category cannot

be controlled in studies, concepts such as *industry turbulence* cannot be calculated, and ideal levels of *organizational learning* or R&D investments cannot be derived. Based on the preliminary qualitative evidence that clear cut *industry spaces* may not exist, it is recommended that business and industry researchers conduct further studies before deciding whether to frame their research in terms of *industry* classification. Because industry definition is complex, rather than framing companies in terms of a single industry classification as has been the practice, it may be more useful to describe companies in terms of primary, secondary, and tertiary classifications, or to classify each product offering within a company and aggregate the product portfolio into a new classification. Further research into how to better define and classify *industry* may be warranted.

Recommendations for Practice

First, this study found that the dominant *organizational learning* instruments which organizations depend on today are based upon theoretical models, such as Senge's model of a *learning organization*, rather than rigorous empirical research. This implies that it is necessary for practitioners to exercise caution when implementing *organizational learning* solutions and be critical in their evaluation of which instruments they introduce into their organizations. It is important not to confuse the *prevalence* of a model, and how widespread it is, with the *quality* of a model. Just as it is necessary to evaluate manufacturing suppliers for quality of parts, it is necessary to evaluate suppliers of ideas for quality of instruments. These are no less important to the smooth functioning

of an organization, and yet in many cases, these supplies have gone completely unscrutinized.

Second, a significant gap in practice that was noted by several participants was the relative dearth of technical production training. Product Engineer Robert Lehman crystallized this: "You know, we spend plenty of time in like legal training and stuff like that. Everybody takes online classes on that, all of the time, but whenever you're doing production, there's not a lot of training involved." There exist several potential reasons why technical production training may be addressed less than other topics. Arguably, identifying the root causes and remedying the dearth of technical production training opportunities should be a priority for HRD practitioners working in companies with production environments, regardless of whether the HRD practitioner is based at the plant location. Because companies are systems which are best understood holistically, it is important to engage learning in all of a company's functions. Arguably, there are no areas or functions which are *unimportant* when it comes to learning. Innovation is often limited by a company's ability to disseminate learning throughout an organization and make practical use of insights. If a particular group does not keep pace with the advancements that are sometimes locked away in R&D labs, such a group's *absorptive capacity* may be limited, and they may experience difficulty in learning in the future. Since capabilities often build on previous ones, advancement may fundamentally depend on prior learning, leaving such a function hopelessly behind its competitors.

Moreover, while many organizations focus resource investments on their R&D labs, innovation cannot be predictably managed. In the words of Chief Technical Officer Marty Johnson:

You can plan inventions, but if you get stuck for a month or so, that's not a big thing, but if you're stuck maybe 6 months or a year, it's probably time for us to reconsider that, and maybe start something else or think about a different kind of project.

A hallmark of innovation is its serendipity. Significant product innovations can come from the floor. Insights from manufacturing can shape design. This was highlighted by engineer Tom Mencil: "*You've got to get that technology first and start playing with it, and then seeing what it can do...And in order to get that message across, we actually had to bring the designers from headquarters down here and show them the new capabilities of this equipment, because it changed the way that they can design their parts.*"

At a time when industry advancements come quickly, it may be dangerous to limit learning and development efforts and investments to the most seemingly promising groups. Narrow focus on employee learning limited to certain functions, roles, or high performers may be akin to closing a company off to insights from those groups. Because companies cannot know what the future will hold, insights from previously neglected departments may hold the key to the next great innovation. While in the short term, focusing learning resources at select groups may look like a fiscally wise idea, over the

long term it may have many latent costs that are generally unaccounted for with financial models such as ROI measures.

Third, there are several types of organizational knowledge that it is important to facilitate. These include *tacit knowledge*, *know-who*, *tribal knowledge*, and *documentation*.

Tacit knowledge becomes a part of the individual employee, rather than transcending the individual employee and becoming a part of the collective, shared wisdom. Experience builds knowledge, which become like the lenses in one's glasses, shaping the opportunities which are recognized. *Tacit knowledge* may involve wisdom that is difficult to put into words, such as knowing the feel of how a machine should operate, or the recognition of how a current situation is similar to a past event. Since *tacit knowledge* is difficult to share, and may come as second nature to an individual, those holding *tacit knowledge* may not even be aware that the information would be of value to a novice. Pairing novices with experienced employees to collaborate on projects may serve to engage experienced employees within the organization, renewing their sense of purpose, and help disseminate the *tacit* knowledge, as novices observe how an expert works, and absorb tips and tricks from the experience. It may also be useful to develop a *community of practice*, where novices observe experts through *legitimate peripheral participation*, doing minor tasks while apprenticing to experts, and eventually building up their skills (Lave & Wenger, 1991). Work-based learning projects may be another means of developing capacities, since employees share projects from which they are learning

with a larger group, reflect on this learning, and share these insights (Brown, Harte, and Warnes, 2007).

Several participants discussed the importance of knowing *who* to go to for information, rather than just knowing *where* to go for information. This can help learners tap into the vast stores of *tacit knowledge* which remain hidden in many organizations. Knowing *who* to go to for information, especially when working on projects outside of the department, can be challenging, particularly if there has been significant turnover. Internal corporate networking can be an effective means of building *know-who*, so that employees can identify who knows key information that may be critical to a project.

Tribal knowledge was also viewed as an important factor of *organizational learning*. *Tribal knowledge* involves the keeping of project history, expertise, and approaches that serve as competitive advantage for the firm, and often have not been written down (Sidebottom, 2013). *Tribal knowledge* usually involves the passing of information from older, more experienced employees to younger novices through less tangible means. *Tribal knowledge* significantly shapes organizational culture and practices, contributes to process inconsistencies (Mueller & Saxena, 2011) and is often resistant to change (Allen, 2013). Because things have been done in a certain way in the past, they often continue to be done in that manner, even though the new employees do not know *why*.

The flow of *tribal knowledge* is frequently impeded by intergenerational conflict, fear of losing one's position as *expert*, and fear of being replaced in one's job role (Sidebottom, 2013). Pairing experienced employees with novices for mentorship may

facilitate the flow of information. Others have suggested that developing an agreement to "lease back" retirees can be helpful to ensuring that the tribal knowledge is not lost when employees exit the organization (Collins, 2011).

Documented knowledge is important, but constitutes only a small fraction of an organization's knowledge. Documentation processes can take significant amounts of employee time, particularly when it involves the production of a regulated product. However, the amount of time spent documenting processes takes away from time which could be spent innovating. There is therefore a balance which needs to be struck between focusing on documentation, which primarily involves soon-to-be *past* processes, and innovation, which involves future processes. *Documented knowledge* is primarily *denotative* knowledge. Imagining that meaning is like an iceberg, meaning is composed of two parts: *denotative meaning*, which is decontextualized, explicit, direct, and perhaps most importantly, visible, and *connotative meaning* which runs deeper, is invisible, and involves the context--information like why, when, and how to apply it as well as sometimes who should use it (Figure 31). While it is challenging to bring out the contextualized portions of information, no organization should rely upon *documentation* alone. Organizational wisdom runs much deeper.

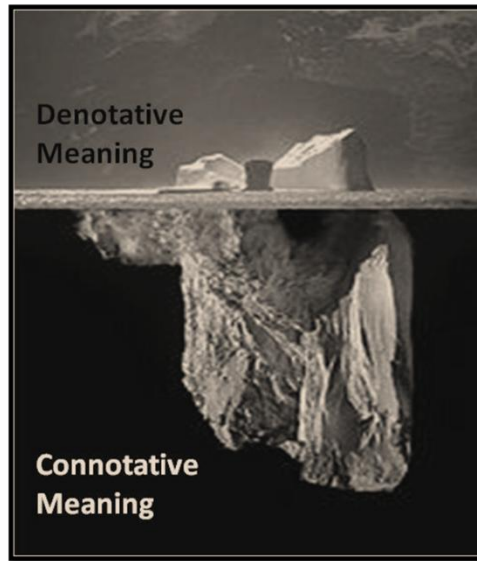


Figure 31. Iceberg of denotative and connotative meaning.

Fourth, working to improve employee *engagement* should be a priority. While *employee engagement* has usually been viewed from the *employee side*, there are many things that practitioners can do to *engage employees* from the *company side*. As the workforce growth begins to shrink over the coming decades, *employee engagement* may become increasingly important. The Bureau of Labor Statistics has projected that the annual growth rate of the U.S. labor force will slow to 0.7 percent over the 2010-2020 period (Toosi, 2012).

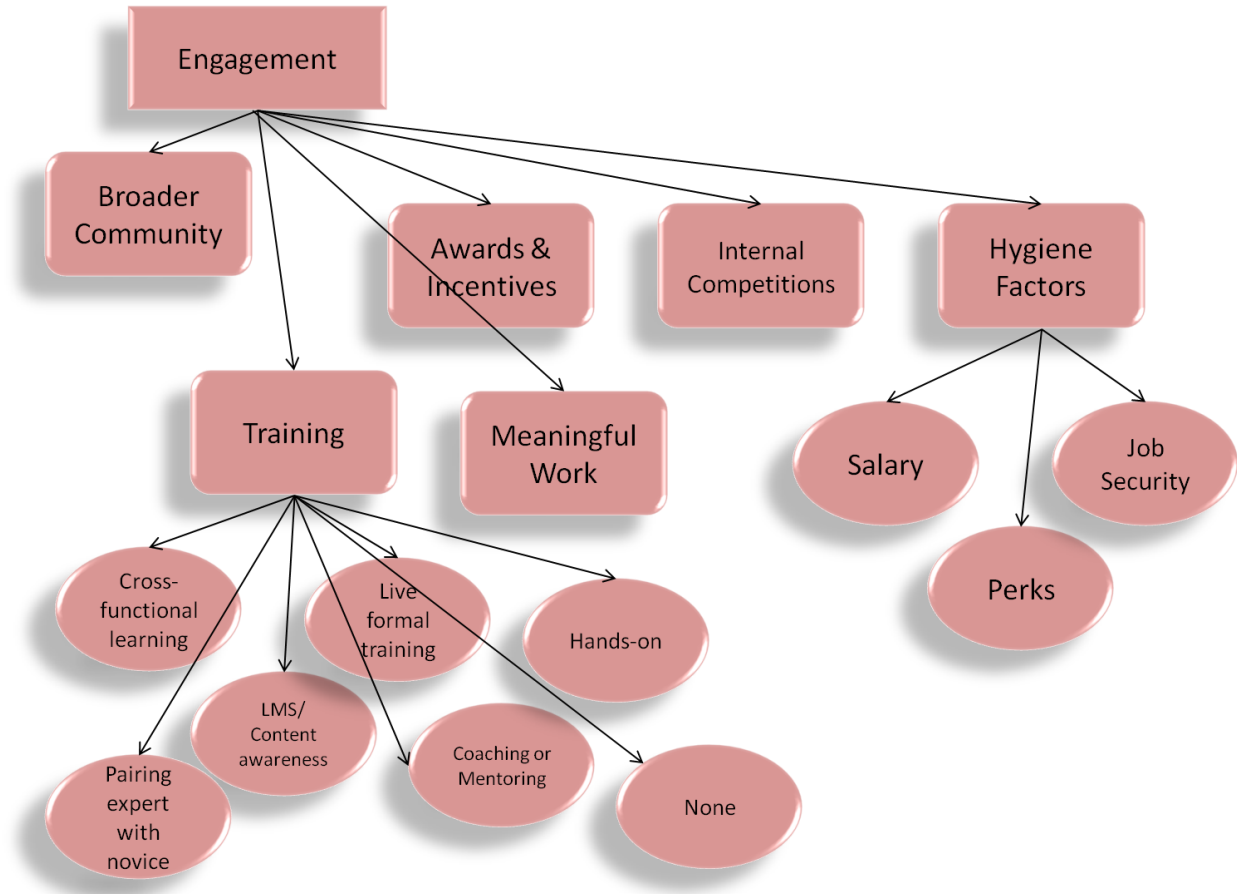


Figure 32. Dimensions of Employee Engagement.

Offering training is just one way that companies can work to *engage* employees.

It may be useful for HRD practitioners to broaden their purview and work to *engage* employees across the spectrum. These activities may include:

- organizing employee groups
- designing informal workplace learning programs
- organizing project-based learning assignments

- facilitating sessions between employees and managers for understanding how to meaningfully reward employees

Based on the evidence that informal learning is a dominant mode of learning in modern organizations, I would argue that the role of human resource development practitioner is to provide development opportunities to employees, regardless of the myriad forms that development opportunities may take. Focusing too narrowly on traditional classroom and eLearning modes of delivery may impede the effectiveness of HRD practitioners' delivery of learning. In an era of increased workplace learning demands, it may be time for HRD practitioners to step away from the cubicle and be more creative in their instructional modes in order to better meet the changing learning and development needs of the workplace.

Fifth, this study demonstrated the significance of *company culture* in understanding the overall process of *organizational learning*. While organizational development (OD) practitioners have already understood the importance of understanding *company culture* in implementing change interventions, learning itself may be understood as a type of change. That *company culture* does significantly shape *organizational learning*, preceding several other factors, implies that it may be critical for learning and development practitioners to understand *company culture* before crafting learning solutions. It may be the case that learning solutions that are not fitted to the *company culture* are less likely to be taken up by learners and put to use on-the-job--hence contributing to the current training transfer gap where over 70% of learning solutions fail to transfer to the job within one year (Paradise, 2008). This may be issue

may be especially acute with just-in-time solutions, which often go unmeasured for their effectiveness since learners are expected to grab the information and go. Who is accessing the information is rarely examined, and whether those who have accessed documents are putting the information to good use on the job often goes unmeasured.

This implies that it may be important for learning and development practitioners to learn about organizational development (OD) practices in order to better assess the *company culture* before crafting learning solutions. While this may seem like a difficult and perhaps unnecessary step for learning and development practitioners, adding up-front culture assessment to the process may result in more effective solutions that reduce training costs over the long term. Likewise, understanding *organizational learning* as another type of *organizational change* may prove fruitful in building initial support for, and eventually scaffolding a change.

Further, since an increasing number of learning and development solutions are being used more broadly as on-the-job learning aids, to be used by a *self-selecting* audience for whom the job aid may not have been originally developed, traditional forms of training assessment involving *audience analysis* may be becoming less germane. For example, non-technical employees may make use of a job aid designed for newly hired engineers in order to better understand some of the technical aspects of a product. While the job aid may have been designed for a specific purpose with novice engineers in mind, the job aid itself may be utilized by a wider audience for a variety of different purposes. Where this is the case, assessing *company culture* may be more useful than assessing particular group preferences.

References

- Allen, R. (2013). Tribal knowledge. *Quality*, 52(1), 54-59.
- Andriani, P. & McKelvey, B. (2009). From Gaussian to Paretian thinking: Causes and implications of power laws in organizations. *Organization Science*, 20(6), 1053-1071.
- Anells, M. (1997). Grounded theory method, part II: Options for users of the method. *Nursing Inquiry*, 4, 176-180.
- Antonacopoulou, E.P. & Gabriel, Y. (2001). Emotion, learning, and organizational change: Towards an integration of psychoanalytic and other perspectives. *Journal of Organizational Change Management*, 14, 435-451.
- Argote, L. (1999). *Organizational learning: Creating, retaining, and transferring knowledge*. Norwell, MA: Kluwer Academic Publishers.
- Argote, L. (2011). Organizational learning research: Past, present, and future. *Management Learning*, 42(4), 439-446. DOI: 10.1177/1350507611408217
- Argyris, C. (1993). *Knowledge for action: Guide to overcoming barriers to organizational change*. San Francisco, CA: Jossey-Bass.
- Argyris, C. (1998). Teaching smart people how to learn. In Harvard Business Review (Eds). *Harvard Business Review on Knowledge Management*. Boston, MA: Harvard Business School Press, 81–108.
- Argyris, C. & Schon, D. (1974). *Theory in Practice: Increasing Professional Effectiveness*. San Francisco, CA: Jossey-Bass.
- Argyris, C. & Schon, D. (1978). *Organizational learning: A theory of action perspective*. Reading, MA: Addison-Wesley.
- Audebrand, L.K. (2010). Sustainability in strategic management education: The quest for new root metaphors. *Academy of Management Learning and Education*, 9(3), 413-428.
- Bartunek, J.M. & Moch, M.K. (1987). First-order, second-order, and third-order change and Organizational Development interventions: A cognitive approach. *The*

- Journal of Applied Behavioral Science*, 23(4), 483-500. DOI: 10.1177/002188638702300404
- Bateson, G. (1972). *Steps to an Ecology of Mind*. New York, NY: Ballantine.
- Bednar, D.H. & Godkin, L. (2009). Organizational learning and the development of a networked company. *Review of Policy Research*, 26(3), 329-343. DOI: 10.1111/j.1541-1338.2009.00385.x
- Bell, D. (1976). Welcome to the post-industrial society. *Physics Today*, 46-49.
- Bingham, C.B. & Eisenhardt, K.M. (2011). Rational heuristics: the 'simple rules' that strategists learn from process experience. *Strategic Management Journal*, 32(13), 1437-1464. DOI: 10.1002/smj.965
- Bjerke, B. & Hultman, C.M. (2002). *Entrepreneurial marketing: The growth of small firms in the new economic era*. Cheltenham, UK: Edward Elgar Publishing Limited.
- Blackman, D. & Henderson, S. (2005). Why learning organizations do not transform. *The Learning Organization*, 12(1), 42-56. DOI: 10.1108/09696470510574250
- Boisot, M.H. (1999). *Knowledge assets: Securing competitive advantage in the information economy*. Oxford, UK: Oxford University Press.
- Boisot, M. & Child, J. (1999). Organizations as adaptive systems in complex environments: The case of China. *Organization Science*, 10(3), 237-252.
- Boisot, M. & McKelvey, B. (2010). Integrating modernist and postmodernist perspectives on organizations: A complexity science bridge. *Academy of Management Review*, 35(3), 415-433.
- Bougon, M.G., Weick, K.E., & Binkhorst, D. (1977). Cognition in organizations: An analysis of the Utrecht Jazz Orchestra. *Administrative Science Quarterly*, 22, 609-639.
- Bouissac, P. (Ed.) (1998). *Encyclopedia of semiotics*. New York, NY: Oxford University Press.
- Boyle, E.A., Duffy, T., & Dunleavy, K. (2003). Learning styles and academic outcome: The validity and utility of Vermunt's Inventory of Learning Styles in a British

- higher education setting. *British Journal of Educational Psychology*, 73(2), 267-290.
- Braganza, A., Awazu, Y., & DeSouza, K.C. (2009). Sustaining innovation is challenging for incumbents. *Research Technology Management*, 52(4), 46-56.
- Brockman, B.K., Rawlston, M.E., Jones, M.A., & Halstead, D. (2010). An exploratory model of interpersonal cohesiveness in new product development teams. *Journal of Product Innovation Management*, 27, 201-219.
- Brookfield, S. (1992). Developing criteria for formal theory building in adult education. *Adult Education Quarterly*, 42, 79-93.
- Browaeys, M. & Baets, W. (2003). Cultural complexity: A new epistemological perspective. *The Learning Organization*, 10(6), 332-339.
- Brown, B.A., Harte, J., & Warnes, A. (2007). Developing the health care workforce: A comparison of two work-based learning models. *Education and Training*, 49(3), 193-200. DOI: 10.1108/00400910710749323
- Brown, J.S. & Duguid, P. (1991). Organizational learning and communities-of-practice: Toward a unified view of working, learning, and innovation. *Organization Science*, 2(1), 40-57.
- Brownell, J. (2008). Exploring the strategic ground for listening and organizational effectiveness. *Scandinavian Journal of Hospitality and Tourism*, 8(3), 211-229. DOI: 10.1080/15022250802305295
- Bryant, A. & Charmaz, K. (2007). *The SAGE Handbook of Grounded Theory*. Thousand Oaks, CA: SAGE.
- Cangelosi, V.E. & Dill, W.R. (1965). Organizational learning: Observations towards a theory. *Administrative Science Quarterly*, 10, 175-203.
- Chakravathy, B. (1997). A new strategy framework for coping with turbulence. *Sloan Management Review*, 69-82.

- Chan, P., Cooper, R. & Tortopoulos, P. (2005). Organizational learning: Conceptual challenges from a project perspective. *Construction Management and Economics*, 23, 747-756. DOI: 10.1080/01446190500127021
- Chang, D. & Sun, K. (2007). Exploring the correspondence between Total Quality Management and Peter Senge's disciplines of a Learning Organization: A Taiwan perspective. *Total Quality Management*, 18(7), 807-822. DOI: 10.1080/14783360701349914
- Charmaz, K. (2006). *Constructing grounded theory: A practical guide through qualitative analysis*. Thousand Oaks, CA: SAGE.
- Choi, M. (2006). Communities of practice: An alternative learning model for knowledge creation. *British Journal of Educational Technology*, 37(1), 143-146. DOI: 10.1111/j.1467-8535.2005.00486.x
- Cilliers, P. (2005). Knowing complex systems. In K.A. Richardson (Ed). *Managing organizational complexity: Philosophy, theory, and application* (pp.7-19). Greenwich, CT: Information Age Publishing.
- Ciuk, S. & Kostera, M. (2010). Drinking from the waters of Lethe: A tale of organizational oblivion. *Management Learning*, 41(2), 187-204. DOI: 10.1177/1350507609355495v
- Clarke, A.E. (1997). A social worlds research adventure (pp. 63-94). In Strauss, A. & Corbin, J. (Eds.) *Grounded Theory in Practice*. Thousand Oaks, CA: SAGE.
- Coffield, F., Moseley, D., Hall, E. & Ecclestone, K. (2004). *Learning styles and pedagogy in post-16 learning: A systematic and critical review*. (Document number TD/TNC 79.71). London: Learning and Skills Research Center, 1-173.
- Cohen, W. & Levinthal, D.A. (1990). Absorptive capacity: A new perspective on learning and innovation. *Administrative Science Quarterly*, 35, 128-152.
- Collins, M. (2011). How to replace tribal knowledge. *Industrial Maintenance and Plant Operation*, 72(9), 46.
- Cooney, A. (2011). Rigour and grounded theory. *Nurse Researcher*, 18(4), 17-22.

- Crossan, M.M. (1998). Improvisation in action. *Organization Science*, 9(5), 593-599.
DOI:10.1287/orsc.9.5.593
- Crossan, M. & Berdrow, I. (2003). Organizational learning and strategic renewal. *Strategic Management Journal*, 24, 1087-1105.
- Cummings, T.G. & Worley, C.G. (2007). *Organization Development and change* (8th Ed.). Haryana, India: Thompson-Southwestern.
- Curado, C. (2006). Organizational learning and organizational design. *The Learning Organization*, 13(1), 25-48. DOI 10.1108/09696470610639112
- Cyert, R. & March, J.G. (1992). *A behavioral theory of the firm* (2nd Ed.). Malden, MA: Blackwell.
- Cyert, R.M. & March, J.G. (1963). *A Behavioral Theory of the Firm*. Englewood Cliffs, NJ: Prentice-Hall.
- Cyphert, D. & Saiia, D.H. (2004). In search of the corporate citizen: The emerging discourse of corporate ecology. *Southern Communication Journal*, 69(30), 241-256. DOI: 10.1080/10417940409373295
- Daft, R.L. & Weick, K.E. (1984). Toward a model of organizations as interpretation systems. *Academy of Management Review*, 9(2), 284-295.
- D'Aveni, R.A. (2007). Mapping your competitive position. *Harvard Business Review*, 110-120.
- Davis, D. & Daley, B.J. (2008). The learning organization and its dimensions as key factors in firms' performance. *HRDI*, 11(1), 51-66. DOI: 10.1080/13678860701782352
- Davis, T.R.V. & Luthans, F. (1980). A social learning approach to organizational behavior. *Academy of Management Review*, 5, 281-290.
- de Geus, A.P. (1988). Planning as learning. *Harvard Business Review*, 66, 70-74.
- Delaney, J.T. & Huselid, M.A. (1996). The impact of human resource management practices on perceptions of organizational performance. *Academy of Management Journal*, 39(4), 949-969.

Dervitsiotis, K.N. (2006). Building trust for excellence in performance and adaptation to change.

Total Quality Management, 17(7), 795-810.

Dess, G.G. & Beard, D.W. (1984). Dimensions of organizational task environments.

Administrative Science Quarterly, 29(1), 52-73.

DeVilbiss, C.E., & Gilbert, D.C. (2005). Using causal relationships to prioritize actions.

Leadership and Management in Engineering, 5(3), 62-67. DOI:

10.1061/(ASCE)1532-6748(2005)5:3(62)

Dirani, K.M. (2009). Measuring the learning organization culture, organizational commitment, and job satisfaction in the Lebanese banking sector. *Human Resource Development International*,

12(2), 189-208. DOI:

10.1080/13678860902764118

Donmoyer, R. (1990). Generalizability and the single-case study. In E.W. Eisner & A.

Peshkin (Eds.). (pp. 175-200). *Qualitative inquiry in education: The continuing debate*. New York, NY: Teachers College Press.

Driver, M. (2002). The learning organization: Foucauldian gloom or Utopian sunshine?

Human Relations, 55(1), 33-53. DOI: 10.1177/0018726702055001605

Drucker, P. (1999). Knowledge-worker productivity: The biggest challenge. *California*

Management Review, 41(2), 79-95.

Dubin, R. (1978). *Theory Building* (2nd Ed.). New York, NY: Free Press.

Ebbers, J.J. & Wijnberg, N.M. (2009). Organizational memory: From expectations

memory to procedural memory. *British Journal of Management*, 20(4), 478-490.

DOI: 10.1111/j.1467-8551.2008.00603.x

Ebner, W., Leimeister, J.M., Krcmar, H. (2009). Community engineering for innovations:

the ideas competition as a method to nurture a virtual community for innovations.

R&D Management, 39(4), 342-356. DOI: 10.1111/j.1467-9310.2009.00564.x

Egan, T.M., Yang, B. & Bartlett, K.R. (2004). The effects of organizational learning

culture and job satisfaction on motivation to transfer learning and turnover

intention. *Human Resource Development Quarterly*, 15(3), 279-301.

- el Sawy, O.A. & Bowles, G. (1997). Redesigning the customer support process for the electronic economy: Insights from storage dimensions. *MIS Quarterly*, 21(4), 457-483.
- Emery, F. & Trist, E. (1965). The Causal Texture of Organizational Environments, *Human Relations*, 18(1), 21-32.
- Engestrom, Y. (2001). Expansive learning at work: Toward an activity theoretical reconceptualization. *Journal of Education and Work*, 14, 133-156.
- Epicurus (1963). *The philosophy of Epicurus: Letters, doctrines, and parallel passages from Lucretius*. (Strodach, G.K., Trans.) Evanston, IL: Northwestern University Press.
- Espinosa, A. & Porter, T. (2011). Sustainability, complexity, and learning: Insights from complex systems approaches. *Learning Organization*, 18(1), 54-72. DOI: 10.1108/096964711111096000
- Eysenck, H.J. (1992). Four ways five factors are not basic. *Personality and Individual Differences*, 13(8), 667-673.
- Fang, C., Lee, J., & Melissa, A. (2010). Balancing exploration and exploitation through structural design: The isolation of subgroups and organizational learning. *Organization Science*, 21(3), 625-641. DOI: 10.1287/orsc.1090.0468
- Fang, E. (2011). The effect of strategic alliance knowledge complementarity on new product innovativeness in China. *Organization Science*, 22(1), 158-172. DOI: 10.1287/orsc.1090.0512
- Fendt, J. & Sachs, W. (2007). Grounded theory method in management research: User's perspectives. *Organizational Research Methods*, 11(3), 430-455. DOI: 10.1177/1094428106297812
- Ferguson-Amores, M.C., Garcia-Rodriguez, M., & Ruiz-Navarro, J. (2005). Strategies of renewal: The transition from 'Total Quality Management' to the 'Learning Organization.' *Management Learning*, 36(2), 149-180. DOI: 10.1177/1350507605052556

- Fink, A. (1998). *Conducting research literature reviews: From paper to the internet*. Thousand Oaks, CA: SAGE.
- Fiol, M.C. & Lyles, M.A. (1985). Organizational learning. *The Academy of Management Review*, 10(4), 803-813.
- Ford, D.N., Voyer, J.J., & Wilkinson, J.M.G. (2000). Building learning organizations in engineering cultures: Case study. *Journal of Management in Engineering*, 16(4), 72-83.
- Ford, R. (2008). Organizational learning, change, and power: Toward a practice-theory framework. *Journal of Change Management*, 8(3-4), 173-198.
- Forrester, J.W. (1961). *Industrial Dynamics*. Waltham, MA: Pegasus Communications.
- Foon, M. (1993). A process approach to the transfer of training. *Australian Journal of Educational Technology*, 9(2), 130-143.
- Friedman, V.J., Lipshitz, R., & Popper, M. (2005). The mystification of organizational learning. *Journal of Management Inquiry*, 14(1), 19-30. DOI: 10.1177/1056492604273758
- Gardner, H. (2004). *Frames of mind: The theory of multiple intelligences*. New York, NY: Basic books.
- Garfinkel, H. (1967/1999). *Studies in Ethnomethodology* (7th Ed.). Malden, MA: Blackwell.
- Garratt, B. (2000). *The Learning Organization: Developing Democracy at Work*. Glasgow, UK: Harper Collins Business.
- Garrido, P. (2009). Business sustainability and collective intelligence. *The Learning Organization*, 16(3), 208-222. DOI 10.1108/09696470910949935
- Garrison, R.H., Noreen, E.W., & Brewster, P.C. (2012). *Managerial Accounting* (14th Ed.). Boston, MA: McGraw-Hill.
- Garud, R., Dunbar, R.L.M., & Bartel, C.A. (2011). Dealing with unusual experiences: A narrative perspective on organizational learning. *Organization Science*, 22(3), 587-601. doi 10.1287/orsc.1100.0536

- Gavetti, G. & Rivkin, J.W. (2005). How strategists really think: Tapping the power of analogy. *Harvard Business Review*, 83(4), 54-63.
- Gassman, O., Enkel, E., & Chesbrough, H. (2010). The future of open innovation. *R&D Management*, 40(3), 213-221. DOI: 10.1111/j.1467-9310.2010.00605.x
- Glaser, B., & Strauss, A. (1967). *The discovery of grounded theory*. Chicago, IL: Aldine.
- Glaser, B. (1992). *Basics of grounded theory analysis*. Mill Valley, CA: Sociology Press.
- Goffman, E. (1974). *Frame analysis*. New York, NY: Harper.
- Golley, F. B. (1998). *A primer for environmental literacy*. New Haven, CT: Yale University Press.
- Goncalo, J.A., Polman, E., & Maslach, C. (2010). Can confidence come too soon? Collective efficacy, conflict, and group performance over time. *Organizational Behavior and Human Decision Processes*, 113(1), 13-24.
DOI:10.1016/j.obhdp.2010.05.001
- Green, M., McDonald, A., McGill, E., Miller, L., & Pham, L. (2011). State of the industry 2011: ASTD's annual review of workplace learning and development data. American Society for Training and Development (ASTD).
- Grey, B., Sheelagh, M., Boshoff, C., & Matheson, P. (1998). Developing a better measure of market orientation. *European Journal of Marketing*, 32(9/10), 884-903.
- Guba, E.G. (1990). Subjectivity and objectivity. (pp. 74-91). In E.W. Eisner & A. Peshkin (Eds.). *Qualitative inquiry in education: The continuing debate*. New York, NY: Teachers College Press.
- Gunawardena, C.N. Linder-VanBerschot, J.A., LaPointe, D.K., & Rao, L. (2010). Predictors of learner satisfaction and transfer of learning in a corporate online education program. *American Journal of Distance Education*, 24(4), 207-226.
DOI: 10.1080/08923647.2010.522919
- Haig, B.D. (2008). An abductive perspective on theory construction. *The Journal of Theory Construction and Testing*, 12(1), 7-10.

- Halliday, J. & Johnsson, M. (2010). A McIntyrian perspective on organizational learning. *Management Learning*, 41(1), 37-51. DOI: 10.1177/1350507609347589
- Hamel, G. & Prahalad, C.K. (2002). Competing for the future. In Henry, J. & Mayle, D. (Eds.) *Managing innovation and change*. London, UK: Sage.
- Harris, S.G. (1994). Organizational culture and individual sensemaking: A schema-based perspective. *Organization Science*, 5(3), 309-321.
- Harter, J.K., Schmidt, F.L., & Hayes, T.L. (2002). Business-unit-level relationship between employee satisfaction, employee engagement, and business level outcomes: A meta-analysis. *Journal of Applied Psychology*, 87(2), 268-279. DOI: 10.1037//0021-9010.87.2.268
- Heeseok, L. & Byounggu, C. (2003). Knowledge management enablers, processes, and organizational performance: An integrative view and empirical examination. *Journal of Management Information Systems*, 20(1), 181.
- Hendry, C. (1996). Understanding and creating whole organizational change through learning theory. *Human Relations*, 49(5), 621-642.
- Heraty, N. & Morley, M. (2008). Dimensionalizing the architecture of organization-led learning: A framework for collective practice. *Advances in Developing Human Resources*, 10(4), 472-493. DOI: 10.1177/1523422308320471
- Herriot, S.R., Levinthal, D., & March, J.G. (1985). Learning from experience in organizations. *American Economic Review*, 75(2), 298-302.
- Herzberg, F. (1966). *Work and the nature of man*. Cleveland, OH: World Publishing.
- Hickman, L.A. & Alexander, T.M. (Eds.) (1998). *The essential Dewey, volume 1: Pragmatism, education, democracy*. Bloomington, IN: Indiana University Press.
- Hoe, S.L. (2008). Benefitting from customer and competitor knowledge: A market-based approach to organizational learning. *The Learning Organization*, 15(3), 240-250. DOI 10.1108/09696470810868864
- Holland, J.H. (1992). *Adaptation in natural and artificial systems: An introductory analysis with applications to biology, control, and artificial intelligence*. Cambridge, MA: MIT Press.

- Holmqvist, M. (2009). Complicating the organization: A new prescription for the learning organization? *Management Learning*, 40(3), 275-287. DOI: 10.1177/1350507609104340
- Huber, G.P. (1991). Organizational learning: The contributing processes and the literatures. *Organization Science*, 2, 88-115.
- Hutchins, E. (1991). Organizing work by adaptation. *Organization Science*, 2(1), 14-39.
- Jamali, D., Khoury, G., & Sahyoun, H. (2006). From bureaucratic organization to learning organizations: An evolutionary roadmap. *The Learning Organization*, 13(4), 337-352. DOI 10.1108/09696470610667724
- Jayanti, E.B. (2011a). Through a different lens: A survey of linear epistemological assumptions underlying HRD models. *Human Resource Development Review*, 10(1), 101-114. DOI: 10.1177/1534484310386753.
- Jayanti, E.B. (2011b). Towards pragmatic criteria for evaluating HRD research. *Human Resource Development Review*, 10(4), 431-450. DOI: 10.1177/1534484311412723
- Jayanti, E. (2012). Open sourced organizational learning: Implications and challenges of crowdsourcing for human resource development (HRD) practitioners. *Human Resource Development International*, 1-10. DOI: 10.1080/13678868.2012.669235
- Joiner, B. & Josephs, S. (2007). Developing agile leaders. *Industrial and Commercial Training*, 39(1), 35-42. DOI: 10.1108/00197850710721381
- Jyothibabu, C., Farooq, A., & Pradhan, B.B. (2011). An integrated scale for measuring an organizational learning system. *The Learning Organization*, 17(4), 303-327. DOI 10.1108/09696471011043081
- Kahneman, D., Slovic, P. & Tversky, A. (1982). *Judgment under uncertainty: Heuristics and biases*. New York, NY: Cambridge University Press.
- Kale, P., Singh, H. & Perlmutter, H. (2000). Learning and protection of property assets in strategic alliances: Building relational capital. *Strategic Management Journal*, 21(3), 217-237.
- Kanter, R.M. (1983). *The change masters*. New York, NY: Simon and Schuster.

- Kaplan, R.S. (2005). How the balanced scorecard complements the McKinsey 7-S model. *Strategy and Leadership*, 33(3), 41-46. DOI 10.1108/10878570510594442
- Karataş-Özkan, M. & Murphy, W.D. (2010). Critical theorist, postmodernist, and social constructionist paradigms in organizational analysis: A paradigmatic review of organizational learning literature. *International Journal of Management Reviews*, 12(4), 453-465. DOI: 10.1111/j.1468-2370.2009.00273.x
- Kaur, G. & Gupta, M.C. (2010). A perusal of extant literature on market orientation—concern for its implementation. *Marketing Review*, 10(1), 87-105. DOI: 10.1362/146934710X488960
- Kegan, R. (1994). *In over our heads: The mental demands of modern life*. Cambridge, MA: Harvard University Press.
- Kenny, J. (2006). Strategy and the learning organization: A maturity model for the formation of strategy. *The Learning Organization*, 13(4), 353-368. DOI 10.1108/09696470610667733
- Knorr-Cetina, K. (1999). *Epistemic cultures: How the sciences make knowledge*. Cambridge, MA: Harvard University Press.
- Kogut, B. & Zander, U. (1992). Knowledge of the firm, combinative capabilities, and the replication of technology. *Organization Science*, 3(3), 383-397.
- Kohli, A.K. & Jaworski, B.J. (1990). Market orientation: The construct, research propositions, and managerial implications. *Journal of Marketing*, 54(2), 1-18.
- Kuhn, T.S. (1970). *The structure of scientific revolutions*. Chicago, IL: Chicago University Press.
- Langerak, F. (2001). The relationship between customer and supplier perceptions of the manufacturer's market orientation and its business performance. *International Journal of Market Research*, 43(1), 43-62.
- Lave, J. & Wenger, E. (1991). *Situated learning: Legitimate peripheral participation*. New York, NY: Cambridge University Press.

- Lee, S., Liang, H., & Liu, C. (2010). The effects of absorptive capacity, knowledge sourcing strategy, and alliance forms on firm performance. *Service Industries Journal*, 30(14)2421-2440. DOI: 10.1080/02642060802635551
- Leite, W.L., Svinicki, M., & Shi, Y. (2010). Attempted validation of the scores of the VARK: Learning styles inventory with multitrait-multimethod confirmatory factor analysis. models. *Education and Psychological Measurement*, 70(2), 323-339. doi: 10.1177/0013164409344507
- Levinthal, D.A. & March, J.G. (1993). The myopia of learning. *Strategic Management Journal*, 14, 95-112.
- Levitt, B. & March, J.G. (1988). Organizational learning. *Annual Review of Sociology*, 14, 319-340.
- Lewin, A.Y., Massini, S., & Peters, C. (2011). Microfoundations of internal and external absorptive capacity routines. *Organization Science*, 22(1), 81-98. DOI: 10.1287/orsc.1100.0525
- Liao, L-F. (2008). Knowledge sharing in R&D departments: A social exchange theory perspective. *International Journal of Human Resource Management*, 19(10), 1881-1895.
- Lincoln, Y.S. & Lynham, S.A. (2011). Criteria for assessing theory in human resource development from an interpretive perspective. *Human Resource Development International*, 14(1), 3-22. DOI: 10.1080/13678868.2011.542895
- Love, P.E.D., Li, H., Irani, Z. & Faniran, O. (2000). Total quality management and the learning organization: A dialogue for change in construction. *Construction Management and Economics*, 18(3), 321-331. DOI: 10.1080/014461900370681
- Lyles, M. A., & Schwenk, C. R. (1992). Top management, strategy, and organizational knowledge structures. *Journal of Management Studies*, 29(2), pp. 155-174.
- March, J.G. (1991). Exploration and exploitation in organizational learning. *Organization Science*, 2(1), 71-87.
- March, J.G. & Simon, H.A. (1993). *Organizations*. Oxford, UK: Blackwell.

- Marsick, V.J., & Watkins, K.E. (2003). Demonstrating the value of an organization's learning culture: The Dimensions of the Learning Organization Questionnaire. *Advances in Developing Human Resources*, 5(2), 132-151. DOI: 10.1177/1523422303251341
- Massingham, P. & Diment, K. (2009). Organizational commitment, knowledge management interventions, and learning organization capacity. *The Learning Organization*, 16 (2), 122-142. DOI: 10.1108/09696470910939206
- McCann, J., Selsky, J., & Lee, J. (2009). Building agility, resilience, and performance in turbulent environments. *People and Strategy*, 32(3), 44-51.
- McCarthy, I.P., Lawrence, T.B., Wixted, B. & Gordon, B.R. (2010). A multidimensional conceptualization of environmental velocity. *Academy of Management Review*, 35(4), 604-626.
- McKelvey, B. (2004). Toward a complexity science of entrepreneurship. *Journal of Business Venturing*, 19(3), 313-341. DOI: 10.1016/S0883-9026(03)00034-X
- Mckinley, W. & Scherer, A.G. (2000). Some unanticipated consequences of organizational restructuring. *Academy of Management Review*, 4, 735-752.
- Mets, T. & Torokoff, M. (2007). Patterns of learning organization in Estonian companies. *TRAMES: A Journal of the Humanities and Social Sciences*, 11(2), 139-154.
- Miller, K.D. & Lin, S. (2010). Different truths in different worlds. *Organization Science*, 21(1), 97-114. DOI: 10.1287/orsc.1080.0409
- Miner, A. & Mezas, S. (1996). Ugly duckling no more: Pasts and futures of organizational learning research. *Organization Science*, 7(1), 88-99.
- Mitchell, R. & Meachem, D. (2011). Knowledge worker control: Understanding via principal and agency theory. *Learning Organization*, 18(2), 149-160. DOI: 10.1108/09696471111103740
- Mols, F. & Weber, M. (2013). Laying sound foundations for social identity theory-inspired European Union attitude research: Beyond attachment and deeply rooted identities. *Journal of Common Market Studies*, 51(3), 505-521. DOI:

- 10.1111/j.1468-5965.2012.02316.x. Moorman, C. & Miner, A.S. (1998). Organizational improvisation and organizational memory. *Academy of Management Review*, 23, 698-723.
- Mueller, P. & Saxena, U. (2011). Standard processes unlock tribal knowledge. *Industrial Management*, 53(5), 21-26.
- Narver, J.C. & Slater, S.F. (1990). The effect of a market orientation on business profitability. *Journal of Marketing*, 54, 20-35.
- Newell, A. & Simon, H.A. (1972). *Human problem solving*. Englewood Cliffs, NJ: Prentice Hall.
- Ng, P.T. (2004). The learning organization and the innovative organization. *Human Systems Management*, 23(2), 93-100.
- Nieto, M. & Quevedo, P. (2005). Absorptive capacity, technological opportunity, knowledge spillovers, and innovative effort. *Technovation*, 25, 1141-1157.
- Nonaka, I. (1991). The knowledge-creating company. *Harvard Business Review*, November-December, 96-104.
- Nonaka, I. (1994). A dynamic theory of organizational knowledge creation. *Organization Science*, 5(1), 14-37.
- Nonaka, I. Byosiere, P., Borucki, C.C., & Konno, N. (1994). Organizational knowledge creation theory: A first comprehensive test. *International Business Review*, 3(4), 337-351.
- Nonaka, I., Krogh, G.V., & Voelpel, S. (2006). Organizational knowledge creation theory: Evolutionary paths and future advances. *Organization Studies*, 27(8), 1179-1208.
- Nystrom, P.C. & Starbuck, W.H. (1984). To avoid organizational crises, unlearn. *Organizational Dynamics*, 12, 53-65.
- Ortenblad, A. (2005). Are the right persons involved in the creation of the learning organization? *Human Resource Development Quarterly*, 16(2), 281-283.

- Ortenblad, A. (2010). Odd couples or perfect matches? On the development of management knowledge packaged in the form of labels. *Management Learning*, 4(4), 443-452. DOI: 10.1177/1350507609356664
- Owenby, P.H. (2002). Organizational learning communities and the dark side of the learning organization. *New Directions for Adult and Continuing Education*, 95, 51-60.
- Paap, J. & Katz, R. (2004). Anticipating disruptive innovation. *Research Technology Management*, 47(5), 13-22.
- Paradise, A. (2008). *State of the Industry Report*. American Society for Training and Development (ASTD).
- Park, Y. & Rothwell, W.J. (2009). The effects of organizational learning climate, career-enhancing strategy, and work orientation on the protean career. *Human Resource Development International*, 12(4), 387-405. DOI: 10.1080/13678860903135771
- Passmore, W.A. (1998). Organizing for jazz. *Organization Science*, 9(5), 562-568. DOI:10.1287/orsc.9.5.562
- Pedler, M., Burgoyne, J., & Boydell, T. (1996). *The learning company: A strategy for sustainable development* (2nd Ed.) Maidenhead, UK: McGraw-Hill.
- Perkmann, M., Neely, A. & Walsh, K. (2011). How should firms evaluate success of university-industry alliances? A performance measurement system. *R&D Management*, 41(2), 202-216.
- Peschl, M. (1998). Artificial intelligence. In Bouissac, P. *Encyclopedia of semiotics* (pp.44-46). New York, NY: Oxford University Press.
- Piaget, J. (1969). *Psychology of the Child*. New York, NY: Basic Books.
- Pierce, C.S. (1868). On a new list of categories. *Proceedings of the American Academy of Arts and Sciences*, 7, 287-298. Retrieved from <http://www.cspeirce.com/menu/library/bycsp/newlist/nl-frame.htm>
- Pierce, C.S. (1893). The categories (MS 403). Retrieved from <http://www.cspeirce.com/menu/library/bycsp/ms403/ms403.pdf>

- Poell, R.F., Yorks, L., & Marsick, V.J. (2009). Organizing project-based learning in work contexts: A cross-cultural cross analysis of data from two projects. *Adult Education Quarterly*, 60(1), 77-93.
- Reichertz, Jo (2009). Abduction: The Logic of Discovery of Grounded Theory. *Forum Qualitative Sozialforschung / Forum: Qualitative Social Research*, 11(1), Art. 13. <http://www.qualitative-research.net/index.php/fqs/article/view/1412/2902>
- Rennie, D.L. & Fergus, K.D. (2006). Embodied categorizing in the grounded theory method: Methodical hermeneutics in action. *Theory and Psychology*, 16(4), 483-503. DOI: 10.1177/0959354306066202
- Rescher, N. (2000). *Realistic pragmatism: An introduction to pragmatic philosophy*. Albany, NY: State University of New York Press.
- Rerup, C. & Feldman, M.S. (2011). Routines as a source of change in organizational schemata: The role of trial-and-error learning. *Academy of Management Journal*, 54(3), 577-610. DOI: 10.5465/AMJ.2011.61968107
- Ribbens, B.A. (1997). Organizational learning styles: Categorizing strategic predispositions from learning. *The International Journal of Organization Analysis*, 5(1), 51-73.
- Richards, L. (2009). *Handling qualitative data: A practical guide*. Thousand Oaks, CA: SAGE.
- Rifkin, W. & Fulop, L. (1997). A review and case study on learning organizations. *The Learning Organization*, 4(4), 1-17.
- Rosner, W.J. (1995). Mental models for sustainability. *Journal of Cleaner Production*, 3(1-2), 107-121.
- Roper, L. & Pettit, J. (2002). Development and the learning organization: An introduction. *Development in Practice*, 12(3/4), 258-271. DOI: 10.1080/0961450220149654
- Sackmann, S. (1992). Culture and subcultures: An analysis of organizational knowledge. *Administrative Science Quarterly*, 37(1), 140-161.

- Sackmann, S.A., Eggenhofer-Rehart, P.M. & Friesl, M. (2009). Sustainable change: Long-term efforts toward developing a learning organization. *The Journal of Applied Behavioral Science*, 45(4), 521-549. DOI: 10.1177/0021886309346001
- Saks, A.M. (2006). Antecedents and consequences of employee engagement. *Journal of Managerial Psychology*, 21(7), 600-619. DOI: 10.1108/02683940610690169
- Schein, E.H. (1996). Three cultures of management: The key to organizational learning. *Sloan Management Review*, 38(1), 9-20.
- Schein, E.H. (1999). Empowerment, coercive persuasion, and organizational learning: Do they connect? *The Learning Organization*, 6(4), 163-172.
- Schein, E.H. (2004). *Organizational culture and leadership* (3rd Ed.). San Francisco, CA: Jossey-Bass Publishers.
- Schreyogg, G. & Sydow, J. (2010). Organizing for fluidity? Dilemmas of new organizational forms. *Organization Science*, 21(6), 1251-1262. DOI: 10.1287/orsc.1100.0561
- Schramm, W. (1971, December). Notes on case studies of instructional media projects. Working paper for the Academy for Educational Development, Washington, D.C.
- Senge, P.M. (1990). *The fifth discipline*. New York, NY: Doubleday.
- Schulz, M. (2001). Organizational learning. In Baum, J.A.C. (Ed.). *Companion to Organizations*. Blackwell. pp.1-33.
<http://www.unc.edu/~healdric/Courses/Soci245/Schulz.pdf>
- Shuck, B., Reio, T.G. & Rocco, T.S. (2011). Employee engagement: An examination of antecedent and outcome variables. *Human Resource Development International*, 14(4), 427-445. doi: 10.1080/13678868.2011.601587
- Shuck, B., & Wollard, K. (2010). Employee engagement & HRD: A seminal review of the foundations. *Human Resource Development Review*, 9(1), 89-110.
- Sidebottom, J. (2013). Preserving your firm's tribal knowledge: Succession planning is the key to ensuring your firm's success. *Consulting-Specifying Engineer*, 50(2) 13.
- Sigglekow, N. & Rivkin, J.W. (2005). Speed and search: Designing organizations for turbulence

- and complexity. *Organization Science*, 16(2), 101-122.
- Simon, H. A. (1955). A behavioral model of rational choice. *Quarterly Journal of Economics*, 69, 99–118.
- Simon, H.A. (1991). Bounded rationality and organizational learning. *Organization Science*, 2(1), 125-134.
- Simonin, B.L. (1997). The importance of collaborative know-how: An empirical test of the learning organization. *Academy of Management Journal*, 40(5), 1150-1174.
- Simonin, B.L. (1999). Ambiguity and the process of knowledge transfer in strategic alliances. *Strategic Management Journal*, 20(7), 559-623.
- Simpson, B. & Marshall, N. (2010). The mutuality of emotions and learning organizations. *Journal of Management Inquiry*, 19, 351-365. DOI: 10.1177/1056492610376531
- Sinkula, J.M. (1994). Market information processing and organizational learning. *Journal of Marketing*, 58, 35-45.
- Skeat, J., & Perry, A. (2008). Grounded theory as a method for research in speech and language therapy. *International Journal of Language and Communication Disorders*, 43(2), 95-109. DOI: 10.1080/13682820701437245
- Slater, S.F. & Narver, J.C. (1995). Market orientation and the learning organization. *Journal of Marketing*, 59, 63-74.
- Sligo, F. (1996). Disseminating knowledge to build a learning organization. *International Journal of Human Resource Management*, 7(2), 508-520.
- Smith, P.A.C. & Saint-Onge, H. (1996). The evolutionary organization: Avoiding a Titanic fate. *The Learning Organization*, 3(4), 4-21.
- Snell, R.S. (2001). Moral foundations of the learning organization. *Human Relations*, 54(3), 319-342. DOI: 10.1177/0018726701543003
- Snyder, W.M. & Cummings, T.G. (1998). Organizational learning disorders: Conceptual model and intervention hypotheses. *Human Relations*, 51(7), 873-895.

- Soanea, E., Trussb, C., Alfesc, K., Shantzd, A., Reese, C., & Gatenby, M. (2012). Development and application of a new measure of employee engagement: The ISA engagement scale. *Human Resource Development International*, 15(5), 529-547. doi: 10.1080/13678868.2012.726542
- Spender, J.C. (1992). Business policy and strategy: An occasion for despair, a retreat to disciplinary specialization, or for new excitement? *Academy of Management Best Papers Proceedings*, 42-46. DOI: 10.5465/AMBPP.1992.4976725
- Spender, J.C. (1996). Making knowledge the basis of a dynamic theory of the firm. *Strategic Management Journal*, 17, 45-62.
- Stacey, R. (2007). *Strategic management and organizational dynamics*, (5th Ed.). Upper Saddle River, NJ: Financial Times Prentice Hall.
- Stacey, R. (2003). Learning as an activity of interdependent people. *Learning Organization*, 10(6), 325-331. DOI 10.1108/09696470310497159
- Stacey, R. (2000). The emergence of knowledge in organizations. *Emergence*, 2(4), 23-39.
- Sta. Maria, R.F. & Watkins, K.E. (2003). Perception of learning culture and concerns about the innovation on its use: A question of the level of analysis. *Human Resource Development International*, 6(4), 491-508. DOI: 10.1080/13678860210142128
- Steers, R.M. (1975). Problems in the measurement of organizational effectiveness. *Administrative Science Quarterly*, 20(4), 546-558.
- Sternberg, R.J. & Grigorenko, E.L. (1997). Are cognitive styles still in style? *American Psychologist*, 52(7), 700-712.
- Strauss, A. & Corbin, J. (1990). *Basics of qualitative research: Grounded theory procedures and techniques*. Newbury Park, CA: Sage.
- Strauss, A. & Corbin, J. (1994). Grounded theory methodology: An overview. (pp.273-285). In Denzin, N. & Lincoln, Y. (Eds.) *Handbook of qualitative research*. Thousand Oaks, CA: SAGE.
- Suddaby, R. (2006). From the editors: What grounded theory is not. *Academy of Management Journal*, 49(4), 633-642.

- Sun, P.Y.T., & Scott, J.L. (2003). Exploring the divide – Organizational learning and learning organization. *Learning Organization*, 10(4), 202-215.
DOI:10.1108/09696470310476972
- Symon, G. (2002). The ‘reality’ of rhetoric and the learning organization in the UK. *Human Resource Development International*, 5(2), 155-174. DOI: 10.1080/13678860010025409
- Tellis, G.J., Prabhu, J.C. & Chandy, R.K. (2009). Radical innovation across nations: The preeminence of Corporate Culture. *Journal of Marketing*, 73(1), 3-23.
- Thagard, P. (2005). *Mind: Introduction to Cognitive Science*, (2nd Ed.). Cambridge, MA: MIT Press.
- Toosi, M. (2012). Labor force projections to 2020: A more slowly growing workforce. *Monthly Labor Review*, 45-64.
- Torraco, R.J. (2005). Writing integrative literature reviews: Guidelines and examples. *Human Resource Development Review*, 4(3), 356-367. DOI: 10.1177/1534484305278283
- Tosey, P. (2005). The hunting of the learning organization: A paradoxical journey. *Management Learning*, 36(3), 335-352. DOI: 10.1177/1350507605055350
- Treacy, M. & Wiersema, F. (1993). Customer intimacy and other value disciplines. *Harvard Business Review*, 84-93.
- Tseng, C-C. & McLean, G.N. (2008). Strategic HRD practices as key factors in organizational learning. *Journal of European Industrial Training*, 32(6), 418-432.
- Tsoukas, H. (1993). Analogical reasoning and knowledge generation in organization theory. *Organization Studies*, 14(3), 323-346. DOI: 10.1177/017084069301400301
- Tsoukas, H. (2005). *Complex knowledge: Studies in organizational epistemology*. Oxford, UK: Oxford University Press.

- Tsuchiya, S. (2011). In search of effective methodology for organizational learning: A Japanese experience. *Simulation and Gaming, 42*(3), 384-396. DOI: 10.1177/1046878111401843
- Tushman, M.L. & O'Reilly, C.A. (1996). Ambidextrous organizations: Managing evolutionary and revolutionary change. *California Management Review, 48*(4), 8-30.
- Tuttle, M.M. (2003). Toward a theory of continuous socialization for organizational renewal. Dissertation. UMI Number: 3092796.
- Tversky, A. & Kahneman, D. (1981). The framing effect of decisions and the psychology of choice. *Science, 211*(4481), 453-458. DOI:10.1126/science.7455683. PMID 7455683
- Tversky, A. & Kahneman, D. (1986). Rational choice and framing of decisions. *Journal of Business, 59*, S251-S278.
- Van de Ven, A.H. (1986). Central problems in the management of innovation. *Management Science, 32*(5), 590-607.
- Van de Ven, A.H. & Poole, M.S. (2005). Alternative approaches for studying organizational change. *Organization Studies, 26*, 1377-1396.
- Vasudeva, G. & Anand, J. (2011). Unpacking absorptive capacity: A study of knowledge utilization from alliance portfolios. *Academy of Management Journal, 54*(3), 611-623.
- von Krogh, G., Roos, J., & Slocum, K. (1994). An essay on corporate epistemology. *Strategic Management Journal, 15*, 53-71.
- Vygotsky, L.S. (1978). *Mind in society: The development of higher psychological processes*. Cambridge, MA: Harvard University Press.
- Walsh, J.P. & Ungson, G.R. (1991). Organizational memory. *Academy of Management Review, 16*, 57-91.
- Wang, T. (2004). From General System theory to Total Quality Management. *Journal of American Academy of Business, 4*(1/2), 394-400.

- Waterman, R.H. (1987). *The renewal factor: How the best get and keep the competitive edge*. Toronto, Canada: Bantam Books.
- Watkins, K. & Marsick, V. (1992). Building the learning organization: A new role for human resource developers. *Studies in Continuing Education*, 14(2), 115-129.
- Watkins, K.E. & Marsick, V.J. (1993). *Sculpting the learning organization*. San Francisco, CA: Jossey-Bass.
- Weick, K.E. (1998). Improvisation as a mindset for organizational analysis, *Organization Science*, 9(5), 543–555. DOI:10.1287/orsc.9.5.543
- Weick, K.E. (1969). *The social psychology of organizing*. Reading, MA: Addison-Wesley.
- Weick, K. & Roberts, K. (1993). Collective mind in organizations: Heedful interrelating on flight decks. *Administrative Science Quarterly*, 38(3), 357-381.
- Weick, K. & Westley, F. (1996). Organizational learning: Affirming an oxymoron. In S. Clegg, C. Hardy, and W. Nord (Eds.). *Handbook of organization studies* (pp.440-458). London, UK: Sage.
- Whyte, W.F. (1993). *Street corner society: The sociological structure of an Italian slum (4th Ed.)*. Chicago, IL: University of Chicago Press.
- Woodside, A. (2006). Advancing systems thinking and building microworlds in business and industrial marketing. *Journal of Business and Industrial Marketing*, 21(1), 24-29. DOI:10.1108/08858620610643148
- Yin, R.K. (2003). *Case Study Research Designs and Methods* (3rd Ed.). Thousand Oaks, CA: SAGE.
- Yorks, L. (2005). *Strategic human resource development*. Mason, OH: Thompson South-Western.
- Zaki, J. & Oschner, K. (2011). Reintegrating the study of accuracy into social cognition research. *Psychological Inquiry*, 22(3), 159-182. DOI: 10.1080/1047840X.2011.551743

Zirpoli, F. & Becker, M.C. (2011). The limits of design and engineering outsourcing: Performance integration and the unfulfilled promises of modularity. *R&D Management*, 41(1), 21-43. DOI: 10.1111/j.1467-9310.2010.00629.x

Appendix 1. Participant Invitation Letter.

Dear <name>,

I am currently completing my PhD dissertation at the University of Minnesota on the topic of organizational learning. I am extremely interested in interviewing you because your role as <role> puts you in a unique position to understand the role of learning at <company>. I am hoping that you might be willing to talk with me briefly about your own workplace learning experience.

I have been fortunate in my project sampling both at <company> and other organizations <if applicable> and have recently completed interviews with several <roles previously interviewed; i.e., employees, managers, directors, VP's>. I believe that this diversity should make for an interesting study. Your input would be invaluable.

The interview involves a short set of questions, which should take no more than 30 minutes of your time. Questions have been drawn from significant dimensions mentioned in the literature, based on a review of 1,300 peer-reviewed articles. To date, current instruments are based on theoretical models and no instruments have been based on real-world data. Data will be scrubbed of all personal and corporate identifiers and responses will remain anonymous.

For your participation, you will receive a copy of an organizational learning report summarizing learning at several leading companies. If you can let me know of a convenient time in the coming weeks, I would greatly appreciate it. If you have any questions, feel free to ask. Thank you and have a great day!

Best Regards,

Elizabeth Jayanti

Appendix 2. Deliverable Attachment.

Elizabeth Jayanti

Ph.D. Candidate, University of Minnesota

Organizational Learning Interview

Purpose: The purpose of the study is to identify internal organizational factors or “ways of doing things” that promote or inhibit organizational learning, and determine whether organizations may be said to have a particular learning style. If researchers can learn more about how organizations learn, new tools can be developed that make learning easier, help ensure wise investment of training dollars, and reduce the blind spots in competitive strategy that can impact performance.

Process: You will be asked to answer a short series of approximately 12 questions related to organizational learning and culture.

People: As part of this research, *upper level managers, line and technical managers,* and *employees* will be sampled to track learning flows throughout the organization.

Deliverable: Overview report of organizational learning in multiple companies.

Risks and Benefits of Participation: By participating in the study, you may be asked to answer questions about organizational culture that make you feel uncomfortable, or that you may feel puts you at risk for retaliation from your supervisor. All reasonable precautions will be taken to ensure no one other than the researcher sees your responses (see Confidentiality and Anonymity section below). You may choose not to answer a question at any time throughout the interview process.

The benefits to participating in this study include the satisfaction that you are contributing to the scientific pursuit of knowledge and a deeper understanding of the phenomenon of organizational learning.

Confidentiality and Anonymity: Your responses will be seen only by the researcher and will remain anonymous in all reports of results of this research. There will be no way to identify any individual subject. Please answer the questions as candidly as you can.

Voluntary Nature of the Study: Participation in this study is voluntary. Your decision whether or not to participate will not affect your current or future relations with the University of Minnesota. If you decide to participate, you are free not to answer any question. You may withdraw from the study at any time.

Contacts and Questions: The researcher conducting this study is Elizabeth Jayanti, a PhD Candidate at the University of Minnesota. If you have questions, you are encouraged to contact her at (952) 334-8193, bech0031@umn.edu. Elizabeth Jayanti's advisor at the University of Minnesota is Dr. Alexandre Ardichvili, (612) 626-4529, ardic001@umn.edu.

If you have any questions or concerns regarding this study and would like to talk to someone other than the researcher(s), you are encouraged to contact the Research

Subjects' Advocate Line, D528 Mayo, 420 Delaware St. Southeast, Minneapolis, Minnesota 55455; (612) 625-1650.

Appendix 3. Question Route.**Question: What is it like to be an employee here?**

Probe 1: How is this company different from other companies in the industry?

Probe 2: Thinking about your job for a moment, would you say that your role and responsibilities are generally clear?

Probe 3: What would you say your biggest challenges are in this role?

Probe 4: For example, would you say that the company atmosphere is warm and family-like or formal or competitive or something else?

Question: What's important to the employees and leadership in your

Probe 1: For instance, would you say that this company emphasizes investing in developing human capital, growth with mergers and acquisitions (M&A), or efficient operations?

Probe 2: Would you say that the company focuses more on customers or employees?

Probe 3: Would you say that the company focuses more on product leadership (product innovation), or operational excellence?

Question: What assistance have you received in your job development?

Probe 1: For example, have you received training, coaching, mentoring, or engaged in job rotation?

Probe 2: How often do you participate in training for your job?

Probe 3: About how many hours do you spend in training or learning?

Question: How do decisions get made around here?

Probe 1: For example, does leadership plan the decisions, or do they outline the decision-making process, or do decisions come through consensus?

Probe 2: Would you say that more decisions are planned in advance or would you say that more decisions come in response to market conditions?

Question: If you were a new employee, where would you go to get the information you need to know

Probe 1: For example, would you go to somebody, or a document, a database, or somewhere else?

Probe 2: Would you say that more knowledge is held in "company folklore," or tribal knowledge, built into processes, or written in documents?

Question: What uses does your company make of technology?

Probe 1: Would you say that this company's technology is cutting-edge or cost-effective?

Probe 2: What is the role of technology in your job? How does the technology relate to your job?

Probe 3: Would you say that most organizational improvements have been influenced by new knowledge entering the organization over the past 3 years, or has it been building up over time?

Question: Thinking about your company's products for a minute, what percent would you say is push--where you don't know there's a market demand, versus pull--where you know there's definitely a market demand?

Probe 1: Where on the spectrum between producing innovative technologies at any cost or producing cost-effective technologies would you say this company falls?

Question: Relative to the company's largest competitor, would you say that you have more or less market share?

Probe 1: It might break down by product segment. For instance, in one segment, do you have more or less market share?

Final Question: Can I call you with any follow-up questions? Or would you prefer that I send you an email with a limited number of questions?